ORDER NO. MD9607051C3

Service Manual

COMPACT disc DIGITAL AUDIO

MASH*1 multi-stage noise shaping

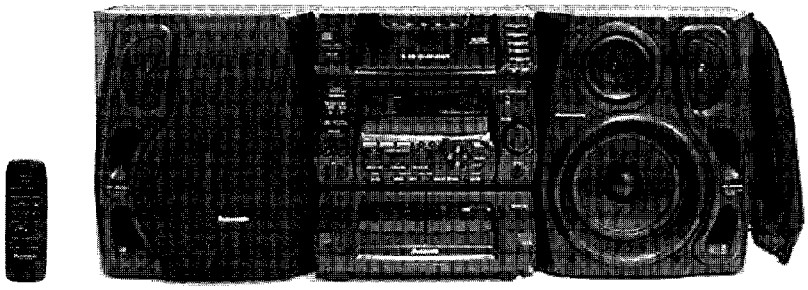
*2 DOLBY B NR

CD Stereo System

SA-CH75

Colour

(K) ... Black Type



Remote Control Transmitter SB-CH75 SA-CH75 SB-CH75

Area

Suffix for Model No.	Area	Colour
(GC)	Middle Near East	(K)
(GCS)	Singapore	
(GT)	Taiwan	
(GN)	Oceania	

System	Music Center	Speaker
SC-CH75 (GC)	SA-CH75 (GC)	SB-CH75 (GC)
SC-CH75 (GCS)	SA-CH75 (GCS)	
SC-CH75 (GT)	SA-CH75 (GT)	
SC-CH75 (GN)	SA-CH75 (GN)	

*2 Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

*1 MASH is a trademark of NTT.

TAPE SECTION : AR2 MECHANISM SERIES
CD SECTION : RAE0150Z TRAVERSE DECK SERIES

■ Specifications

■ Amplifier Section

1 kHz continuous power output	
Both channels driven	2 x 60W (THD 1%, 4 Ω)
RMS	2 x 90W (THD 10%, 4 Ω)
Total harmonic distortion	
Half power at 1 kHz	0.06 % (4 Ω)
Frequency response	
AUX	60 Hz – 20 kHz (–3 dB)
Input sensitivity and impedance	
AUX	250 mV, 28 kΩ
MIC	0.6 mV, 680 Ω
Tone controls	
6 EQ SPACE	HEAVY, CLEAR, SOFT, DISCO, LIVE, HALL
V. BASS (volume at –30 dB)	63 Hz, 7 dB
Load impedance	4 Ω

■ FM Tuner Section

Frequency range	87.50 – 108.00 MHz
Sensitivity	23.3 dBf
Total harmonic distortion	
MONO	0.3 %
STEREO	0.5 %
S/N (MONO)	60 dB
Image rejection at 98 MHz	35 dB
Stereo separation at 1 kHz	35 dB
Antenna terminal(s)	75 Ω (unbalanced)

■ AM Tuner Section

Frequency range	
(For areas except Oceania)	
MW	531 – 1602 kHz (9 kHz steps)
	530 – 1600 kHz (10 kHz steps)
SW	3.2 – 7.300 MHz
	9.5 – 21.850 MHz
(For Oceania)	
AM	522 – 1611 kHz
Sensitivity (for 500 mW)	
(For areas except Oceania)	
MW (at 999 kHz, 1000 kHz)	250 µV/m
SW (at 4 MHz)	12.6 µV
(at 12 MHz)	40 µV
(For Oceania)	
AM (at 999 kHz)	250 µV/m

■ CD Section

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Beam source/wave length	Semiconductor laser / 780 nm
Number of channels	Stereo
Frequency response	20 Hz – 20 kHz (+1 dB, –2 dB)
S/N (CD UNIT OUT)	95 dB (JIS. A)
Wow and flutter	Below measurable limit
Digital filter	8 fs
D/A converter	MASH (1 bit DAC)

Notes :

1. Specifications are subject to change without notice.
   Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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⚠ WARNING

This service information is designed for experiense repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ Cassette Deck Section

Track system	4 track, 2 channel
Heads	
Playback	Solid permalloy head (Rotary head)
Record/playback	Solid permalloy head (Rotary head)
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase 100 kHz
Tape speed	4.8 cm/s ($1^{7}/_{8}$ ips)
Frequency response [(+3 dB, –6 dB) at deck out]	
NORMAL	35 Hz – 14 kHz
HIGH	35 Hz – 14 kHz
S/N (HIGH POSITION)	
Dolby NR off	50 dB (A weighted)
Dolby NR on	60 dB (CCIR)
Wow and flutter	0.18 % (WRMS)
Fast forward and rewind times	Approx. 120 seconds with C-60 cassette tape

■ General

Power consumption	230W
Power supply	AC 110 V/127 V/220 V/240 V, 50/60 Hz (GC, GT) AC 230 V, 50 Hz (GCS) AC 230 – 240 V, 50 Hz (GN)
Dimensions (W x H x D)	270 x 331.5 x 331 mm
Weight	8.9 kg

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■ Before Use

Be sure to disconnect the mains cord before adjusting the voltage selector.
Use a minus (–) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which unit will be used. (If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)
Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

■ Before Repair and Adjustment

Disconnect AC power, discharge both Power Supply Capacitors C522 and C523 through a 10Ω , 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

For GCS
Current consumption at AC 230V, 50 Hz in NO SIGNAL mode should be ~300mA.

For GN
Current consumption at AC 240V, 50 Hz in NO SIGNAL mode should be ~300mA.

For GC
Current consumption at 50/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage AC 110V/127V/220V/240.

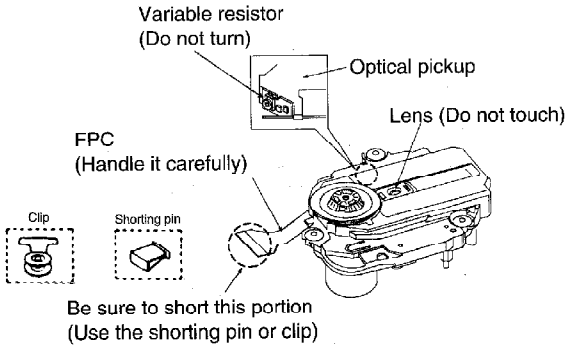
Power supply voltage		AC 110V	AC 127V	AC 220V	AC 240V
Consumed current at 50/60 Hz	50 Hz	~ 600 mA	~ 600 mA	~ 320 mA	~ 300 mA
	60 Hz	—	—	—	—

■ Handling Precautions For Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• Handling of traverse deck (optical pickup)

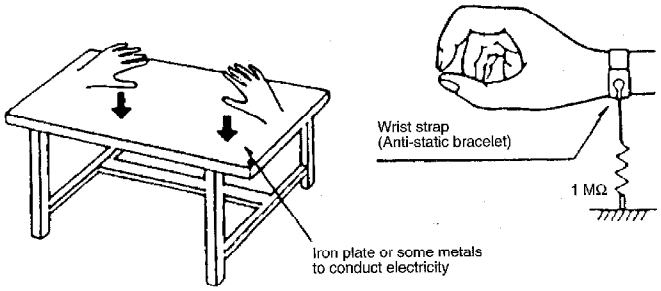
1. Do not subject the traverse deck (optical pickup) to static electricity as it ie extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.



• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution :
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ Precaution of Laser Diode

CAUTION : This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens.
Wavelength : 780 nm
Maximum output radiation power from pick up : 100 µW/VDE

Laser radiation from pick up unit is safety level, but be sure the followings:

1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge : 780nm
Maximale strahlungsleistung der lasereinheit :100µW/VDE

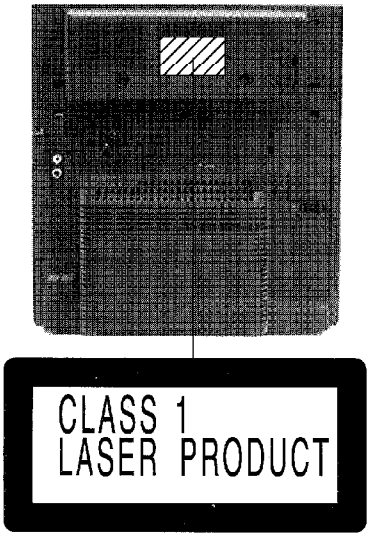
Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den werkseitig justierten einstellregler der lasereinhit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

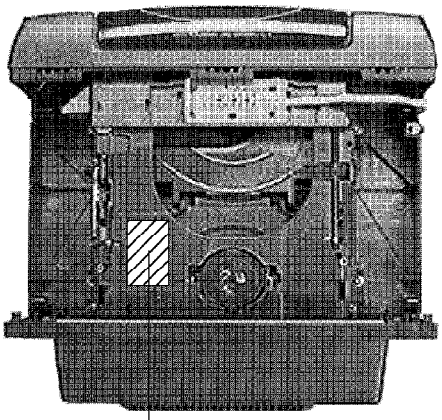
ADVARSEL: I dette a apparat anvendes laser.

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Use of Caution Labels



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



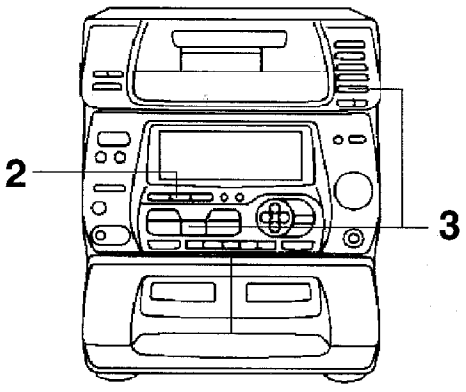
DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

■ Before Moving or Shipping This Unit

Before moving or shipping this system:
Prepare the system as described below to prevent damage to the mechanism.

1. Remove all CDs.
2. Press CD.
3. Hold down stop button (■) for 2 seconds and then without releasing it, hold down both it and DISC 5 for 2 more seconds. (This will turn OFF the power and set the so-called "shipping mode".)
4. Unplug the system.

Avoid strong vibrations or impact while moving the equipment. The shipping mode will turn OFF automatically when you turn the power ON the next time.



■ Operation Checks and Main Component Replacement Procedures

"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing.

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Select items from the following index when checks or replacement are required.**
4. **Refer the Parts No. on the page of "Main Component Replacement Procedures", if necessary.**

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• Main Component Replacement Procedures
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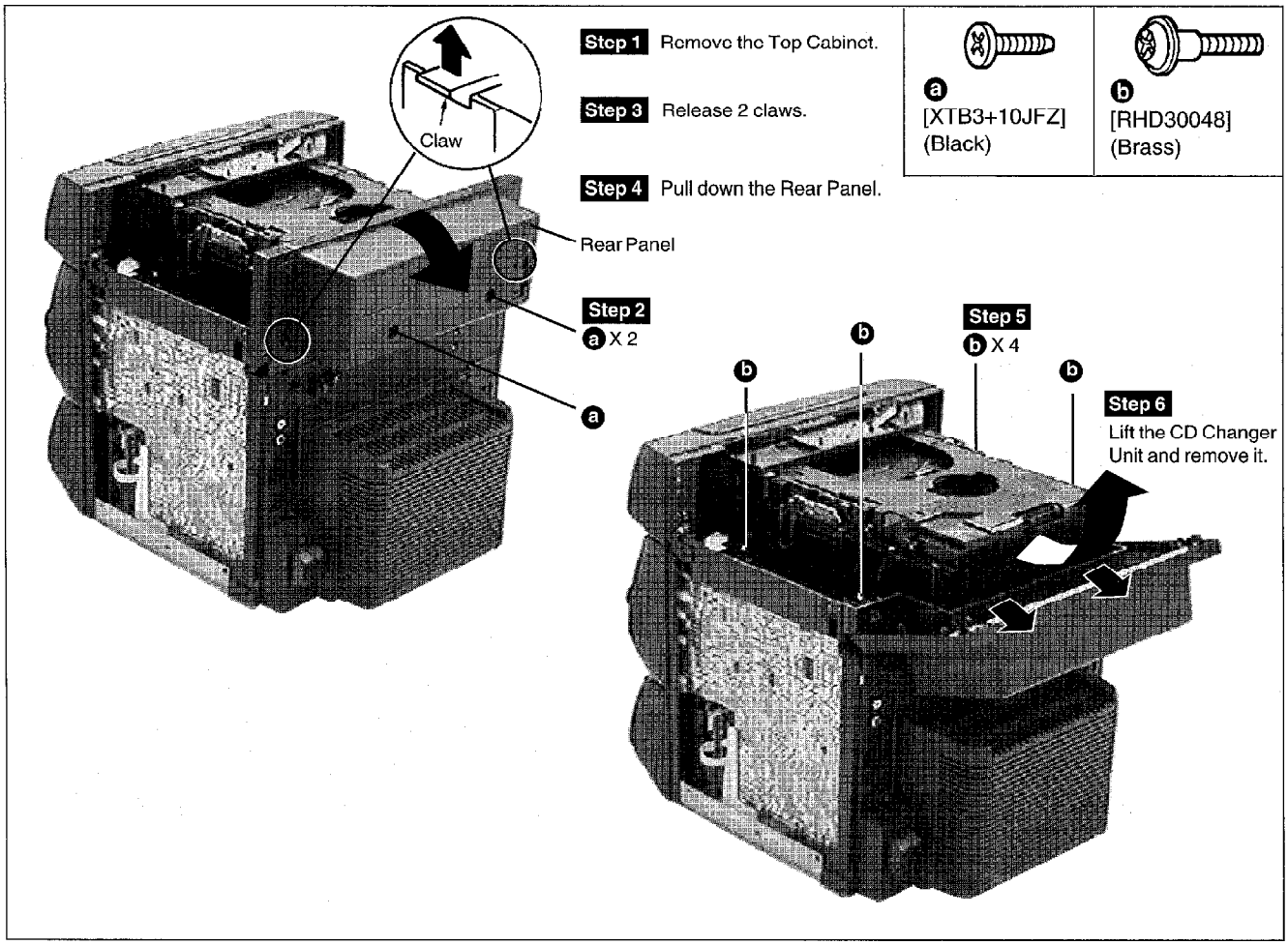
2. Replacement of the Power Amplifier IC and Regulator Transistors 10

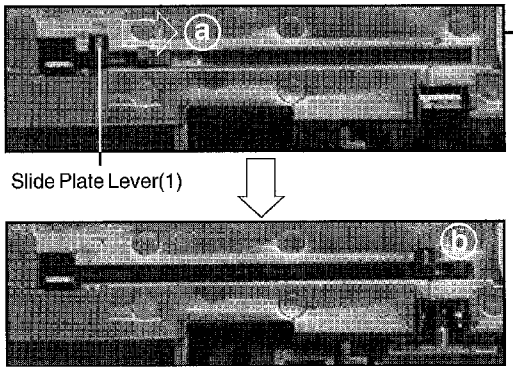
Warning : This product uses a laser diode. Refer to caution statements on page 3.
ACHTUNG : • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

■ Removal of the CD Changer Unit

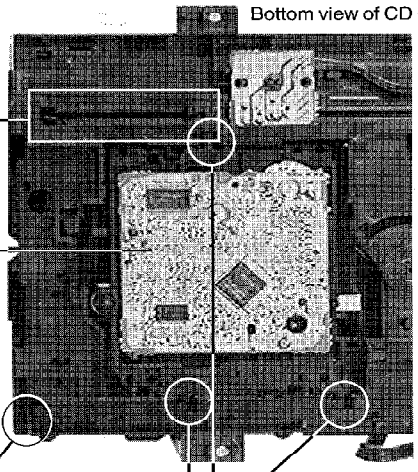


■ Disassembly of the Traverse Unit

Step 1 Follow the procedures in 'Remove of the CD Changer Unit' (Step 1 ~ Step 6).



Bottom view of CD Changer Unit



Step 2

Move the Slide Plate Lever(1) in the direction of arrow ⓐ to the position ⓑ and hold it, then lift up the stopper ⓒ until the Slide Plate Lever(2) eject out. Now the 3 slide plate will be open as shown in the figure 1 on the right and the traverse unit can be removed.

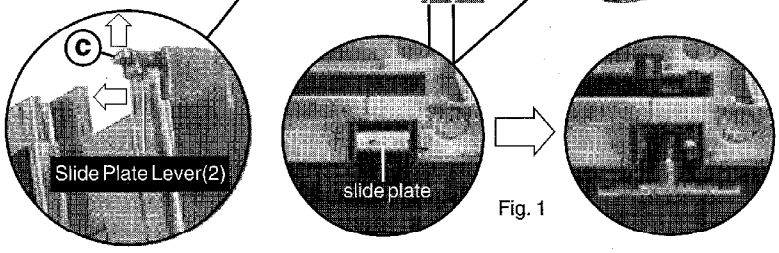
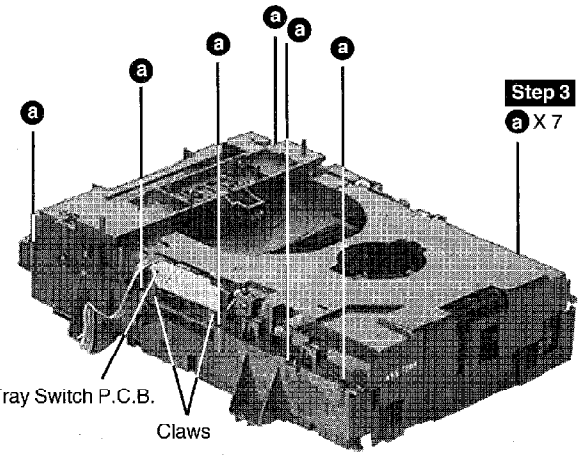


Fig. 1

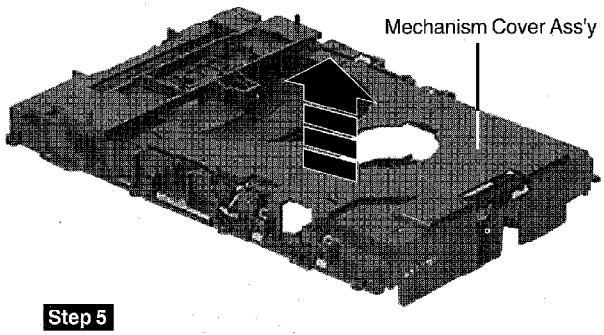
■ Disassembly of the CD Changer Unit

Step 1 Follow the procedures in 'Remove of the CD Changer Unit' (Step 1 ~ Step 6).



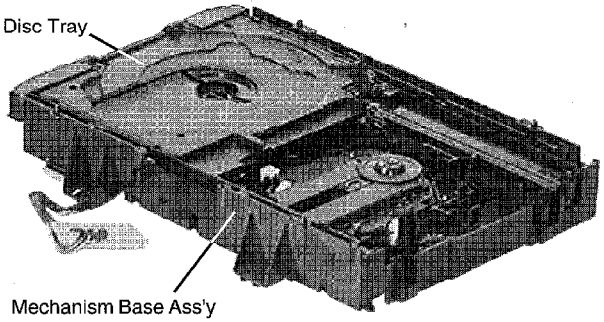
Step 2 Remove the Tray Switch P.C.B.

Step 4 Remove the Mechanism Cover Ass'y.



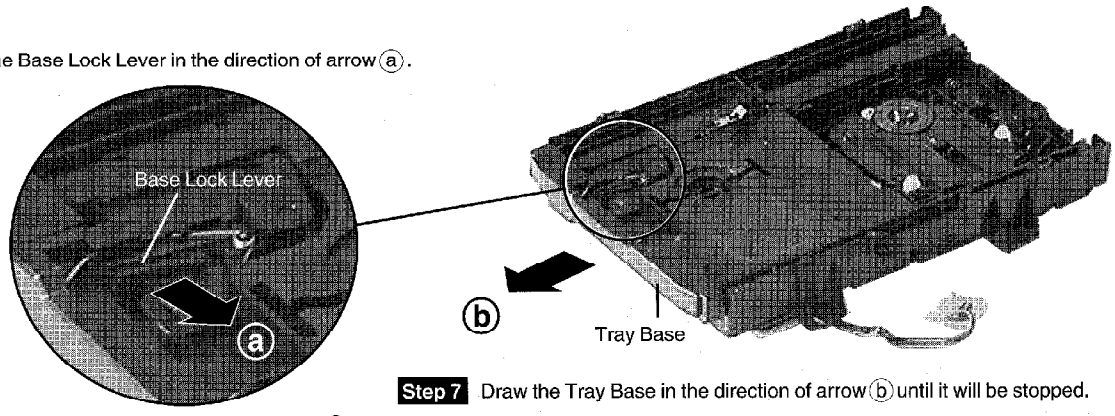
Step 5

Remove the Disc Tray sided on the Mechanism Base Ass'y.



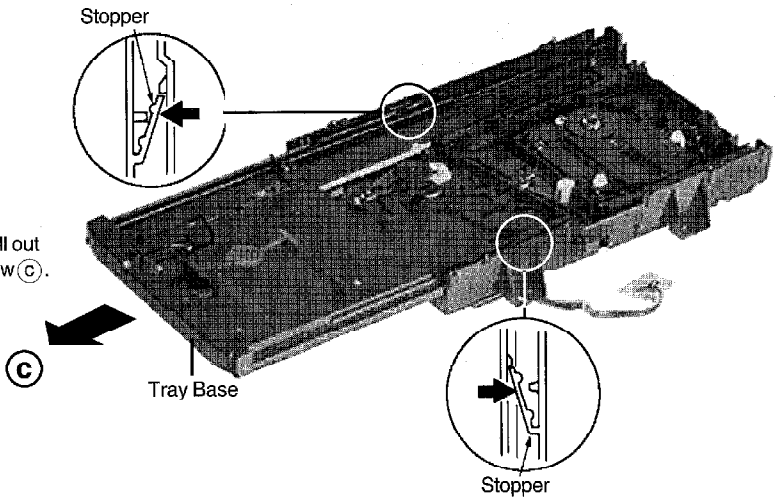
ⓐ
[XTB3+10JFZ]
(Black)

Step 6
Unlock the Base Lock Lever in the direction of arrow ⓐ.



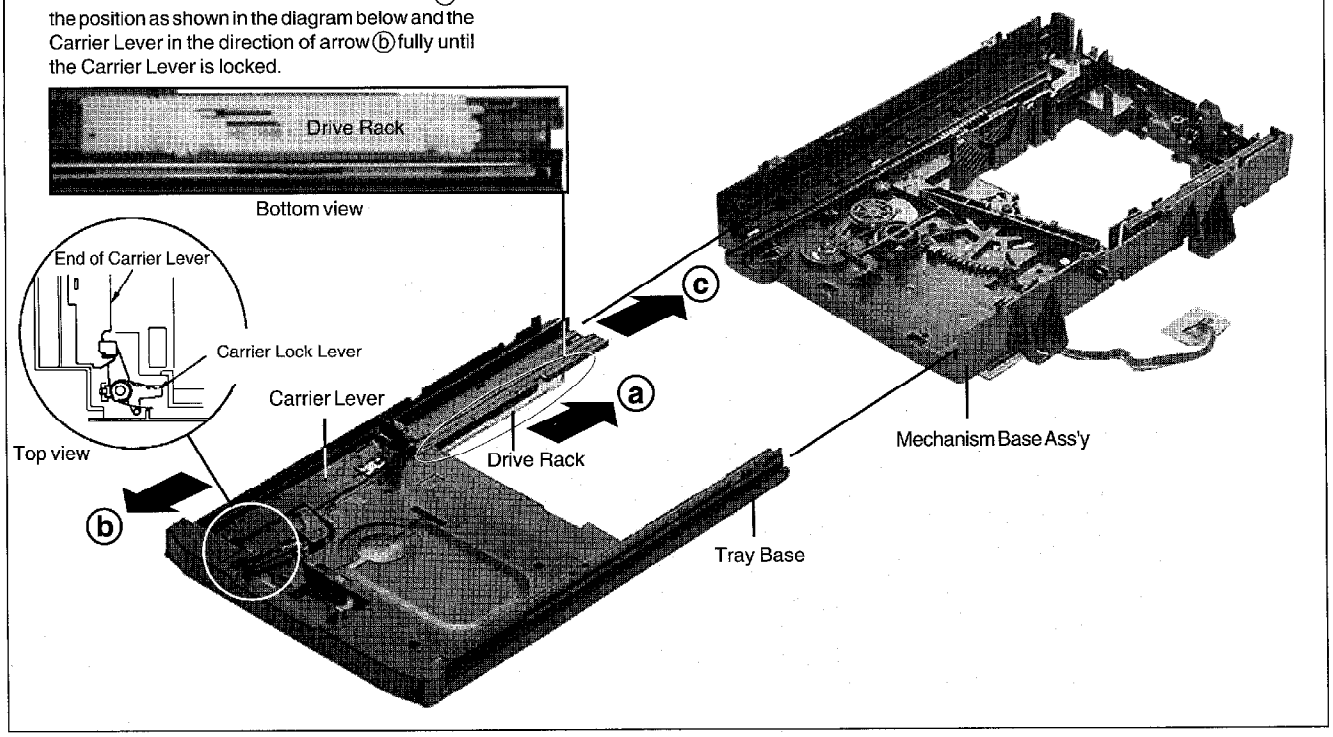
Step 7 Draw the Tray Base in the direction of arrow ⓑ until it will be stopped.

Step 8
Release 2 stoppers manually and pull out the Tray Base in the direction of arrow ⓒ.



■ Assembly of the CD Changer Unit

Step 1
Move the Drive Rack in the direction of arrow ⓐ to the position as shown in the diagram below and the Carrier Lever in the direction of arrow ⓑ fully until the Carrier Lever is locked.



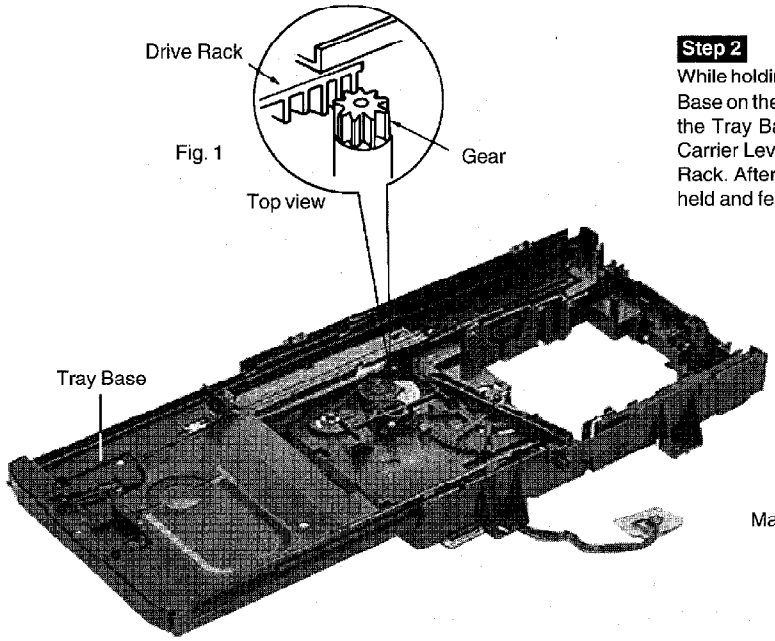


Fig. 1

Step 2

While holding the Drive Rack and Carrier Lever, insert the Tray Base on the Mechanism Base in the direction of arrow ⓒ until the Tray Base stops as shown in figure 1. Release only the Carrier Lever and push the Tray Base together with the Drive Rack. After engaging the gear, release the Drive Rack which held and feed the Tray Base slowly.

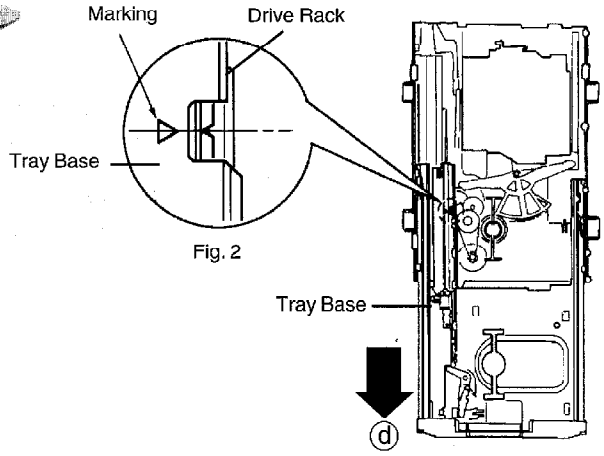


Fig. 2

Step 3

Draw the Tray Base in the direction of arrow ⓓ to the end until it stops. Make sure the mark '▽' on the Tray Base is aligned with the mark '△'on the Drive Rack as shown in figure 2 before closing the Tray Base. (In case that the statement above is not operated, draw the Tray Base again from step 2)

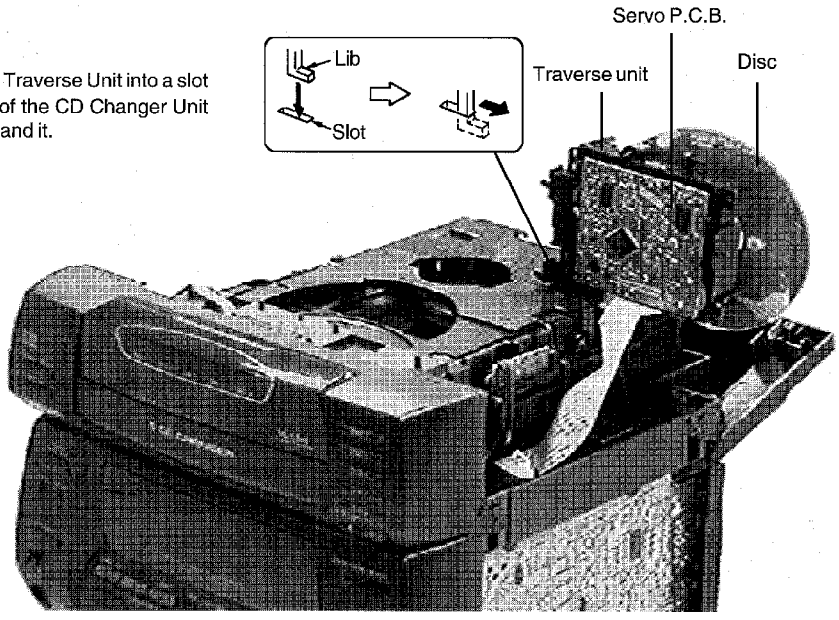
■ Checking Procedure for each major P.C.B.

1. Checking of the Servo P.C.B.

Step 1 Follow the procedures in 'Disassembly of the Traverse Unit' (**Step 1** ~ **Step 2**).

Step 2

Slide in the Traverse Unit into a slot on the top of the CD Changer Unit and then stand it.

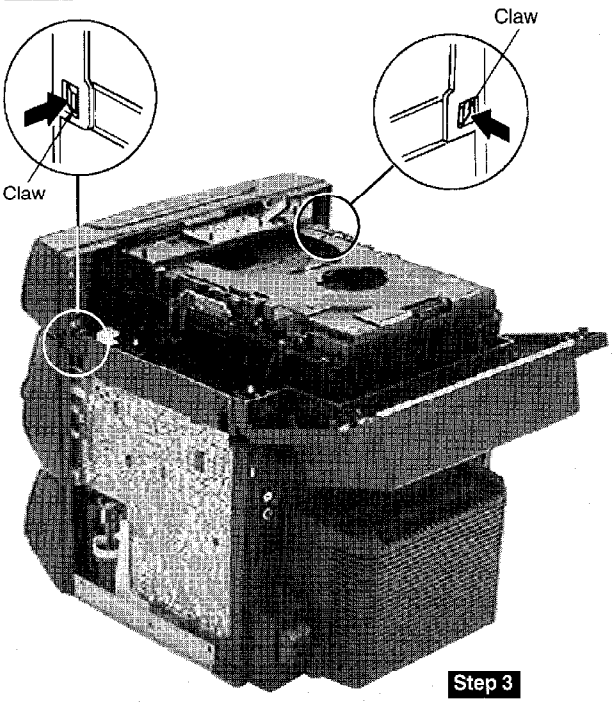


Step 3

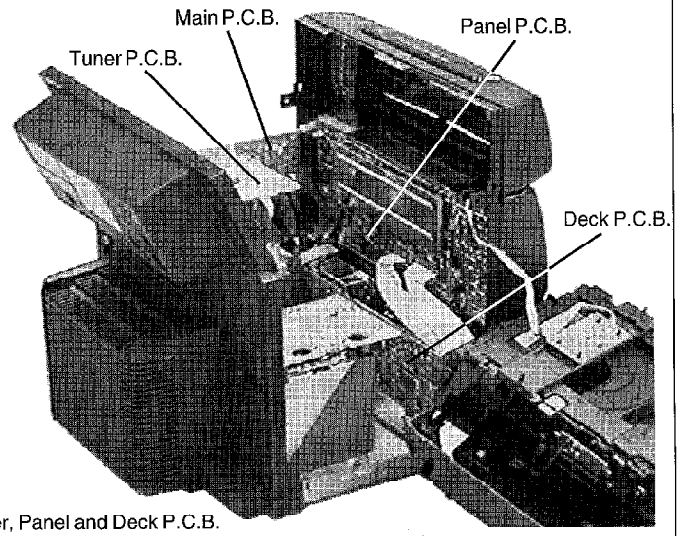
Attach the disc and clamper with magnet to the Traverse Unit as shown in the diagram on the left, then check the Servo P.C.B.
(Refer to page 13 of how to check the CD Unit without connecting to the CD Changer Loading Mechanism.)

2. Checking of the Main, Tuner, Panel and Deck P.C.B.

Step 1 Follow the procedures in 'Removal of the CD Changer Unit' (**Step 1** ~ **Step 4**).



Step 2
Remove the CD Changer Chassis and CD Changer Unit with releasing the claws. (Put the CD Changer Chassis and Unit to the left side of the set)

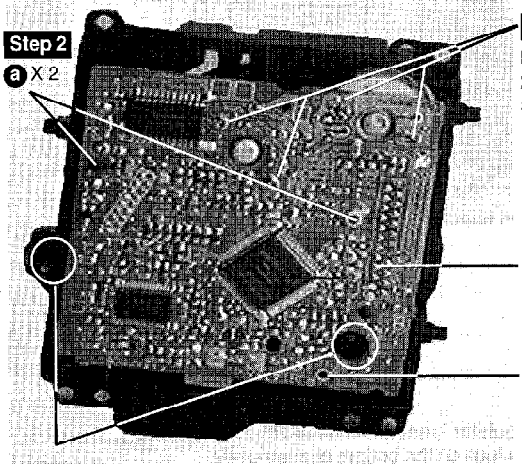


Step 3
Check the Main, Tuner, Panel and Deck P.C.B.

■ Main Component Replacement Procedures

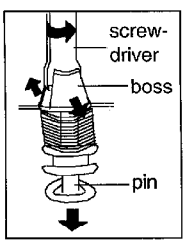
1. Replacement of the Traverse Deck

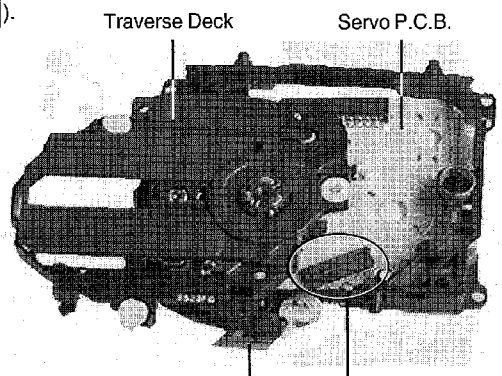
Step 1 Follow the procedures in 'Disassembly of the Traverse Unit' (**Step 1** ~ **Step 2**).



Step 4
Desolder the 4 legs of the 2 motors and pull out the Servo P.C.B.

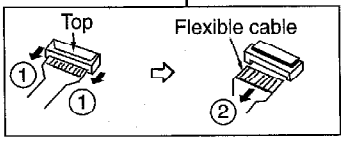
Step 5 Widen the 2 bosses with a flat screwdriver and pull out the 2 pins. Then remove the Traverse Deck.



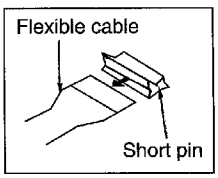


Step 6 Remove the flexible cable CN701.

- Removal of the flexible cable
  Push the top of the connector in the direction of the arrow ①, and then pull out the flexible cable in the direction of the arrow ②.



Note :
Insert a short pin into the flexible cable for traverse unit.

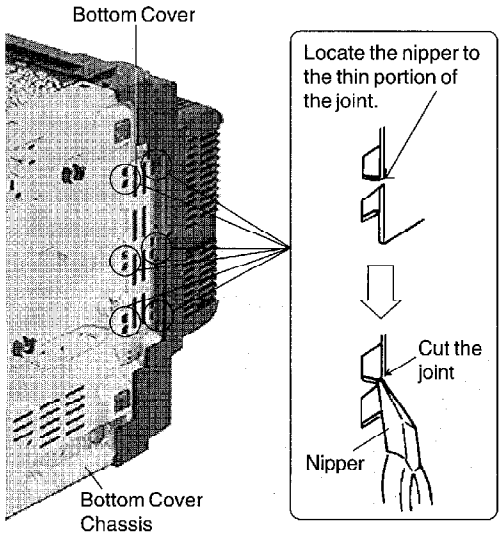


a [XTV2+6G] (Brass)

b [XTN2+6G] (Brass)

2. Replacement of the Power Amplifier IC and Regulator Transistor.

Step 1 Follow the procedures in 'Checking of the Main, Tuner, Panel and Deck P.C.B.' and remove the Front Panel.

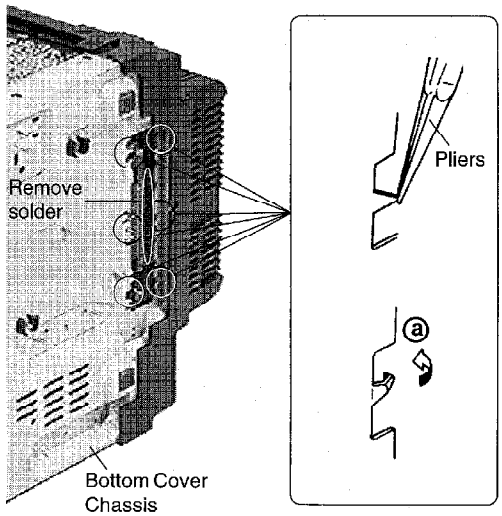


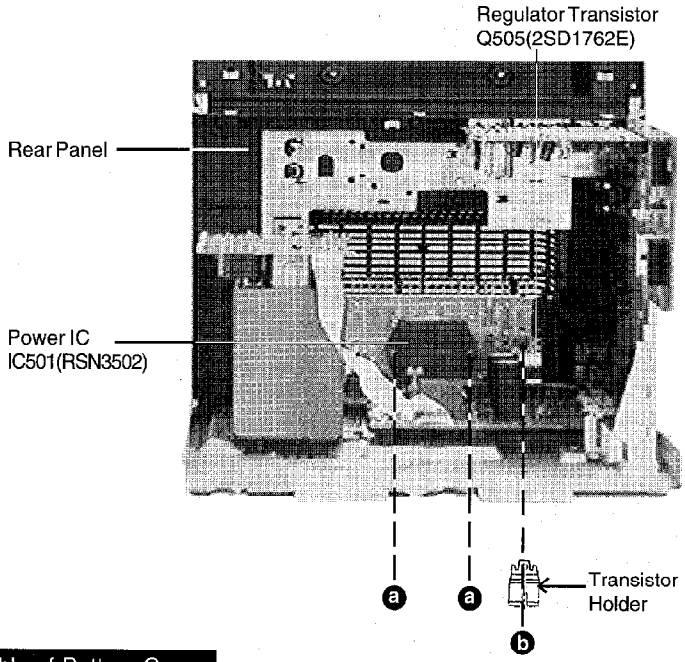
Step 2
Cut the joints (6 portion) between bottom cover and bottom cover chassis ass'y with a nipper.

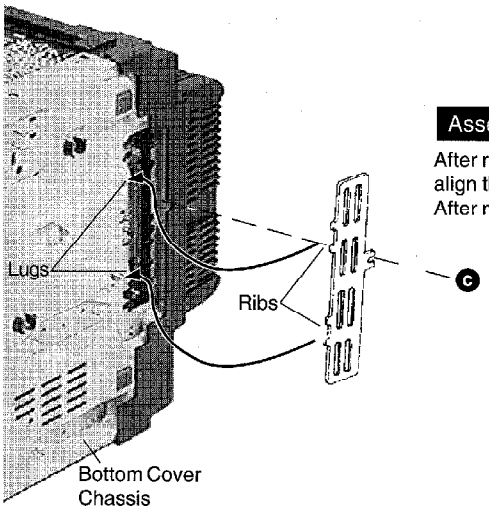
Step 3
After cutting the joints (6 portions), bend the portions of the bottom chassis ass'y in the direction of arrow ⓐ with pliers. (Step 2 must be performed to avoid injury by sharp edge.)

Step 4
Unsolder the terminals of Power IC or Regulator Transistor on the solder surface.

Step 5
Remove 3 screws fixed to the Power IC and Transistor Holder, then remove Power IC, Transistor Holder and Regulator Transistor.

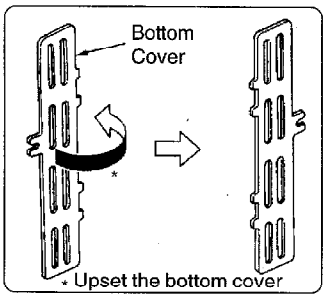






Assembly of Bottom Cover

After replacing the Power IC or Regulator Transistor, upset the bottom cover and align the ribs of bottom cover to the lugs on the bottom chassis ass'y.
After mounting the bottom cover on the bottom chassis ass'y, fix it with a screw.



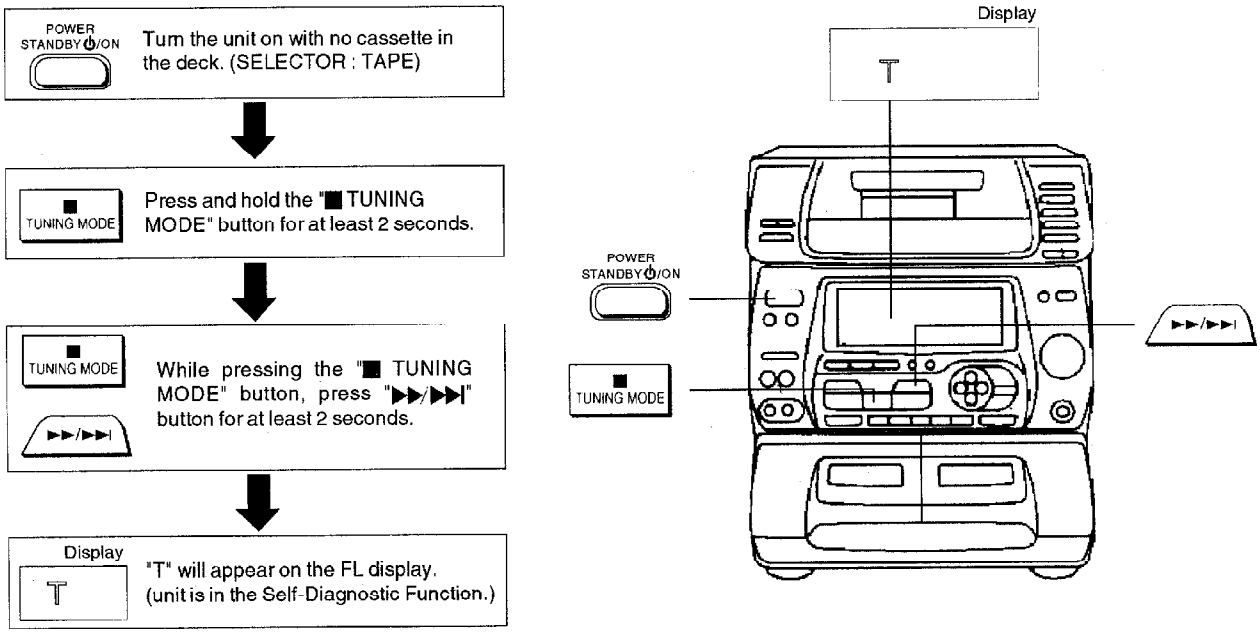
ⓐ	[XTW3+15T]
ⓑ	[XTB3+10JFZ]
ⓒ	[XTB3+8J]

■ Self-Diagnostic Display Function

■ Self-diagnostic display

This unit is equipped with a self-diagnostic display function which, if a problem occurs, will display an error code corresponding to the problem. Use this function when performing maintenance on the unit.

■ How to enter the Self-Diagnostic Function


POWER STANDBY⏻/ON
Turn the unit on with no cassette in the deck. (SELECTOR : TAPE)
TUNING MODE
Press and hold the "■ TUNING MODE" button for at least 2 seconds.
TUNING MODE
►►/►►I
While pressing the "■ TUNING MODE" button, press "►►/►►I" button for at least 2 seconds.
Display
T
"T" will appear on the FL display. (unit is in the Self-Diagnostic Function.)
Display
T
POWER STANDBY⏻/ON
TUNING MODE
►►/►►I

■ Cassette Mechanism Test (For error code H01, H02, H03, F01, F02)

1. Press "TAPE, DECK 1/2" to select Deck 2.
2. Load a cassette tape with the erasure prevention tab, remove from left side only and close the cassette holder.
3. Press "►►/►►I" (Tape will be stop after 2 seconds).
4. Load a cassette tape with the erasure prevention tab, remove from right side only and close the cassette holder.
5. Press "I◄◄/◄◄" (Tape will be stop after 2 seconds).
6. Load a pre-recorded tape with both side and close the cassette holder.
7. Press "► FM MODE/BP" (After TPS function, tape will stop automatically).
8. Press "REC START/STOP" (Tape will not move).
9. Press "■ TUNING MODE" to indicate Error code.
   • If several problem exist, error code will change each time when "■ TUNING MODE" is pressed. (e.g. H01 → H03 → F01 ..... etc.)
10. Press "TAPE, DECK 1/2" to select Deck 1.
11. Repeat step 2 to 9 to test Deck 1. (Tape Deck 1 will not check H02 because of no recording function)

■ CD Mechanism Test (F15, F16, F25 ~ F28, F75)

1. Press "CD".
2. Press "CHECK -NEXT/–AUTO".
3. Press "■ TUNING MODE" to indicate Error Code.
   • If several problem exist, error code will change each time when "■ TUNING MODE" is pressed. (e.g. F15 → F16 → F25 ..... etc.)

■ To clear all Error code

1. Press "■ TUNING MODE" button for 5 seconds.
2. FL indicator shows "CLEAR" for 1 second and change to "T".

■ How to get out from Self-Diagnostic function

1. Press "POWER" button OFF.

■ Power Amplifier Failure (F61)

1. When power amplifier fail, F61 will indicate automatically.

■ Description of Error Code

(1) Error detection for Cassette Mechanism block

No.	Error	Error Display	Problem condition
1	MODE SW detection error	H01	Faulty operation of cassette mechanism. Faulty contact or short-circuit of mechanism mode switch (S951, S971).
2	REC INH SW detection error	H02	Recording not possible. Faulty contact or short-circuit of REC INH switch (S974, S975).
3	HALF SW detection error	H03	Playback can not perform. Faulty contact or short-circuit of HALF switch (S952, S972).
4	Reel Pulse detection error	F01	The tape advances slightly and then stops. Faulty reel pulse, faulty hole detect IC (IC951, IC971).
5	TPS abnormal	F02	Cassette deck will not perform TPS function. Faulty playback EQ/recording amplifier IC (IC101).

(2) Error detection for CD/Changer block

No.	Error	Error Display	Problem condition
1	REST SW detection error	F15	CD does not function. This error occurs when the Optical Pick Up REST SW (S701) is not detected within the specified time (about 8 seconds)
2	S3 (TUP) detection error	F16	CD does not function. This error occurs when S3 (Traverse up detection) is not ON or OFF within the specified time.
3	S4 (DRO) detection error	F25	Tray does not stay open. This error occurs when S4 (Tray open detection) is not ON or OFF during OPEN/CLOSE operation within the specified time.
4	Transmission error between CD servo LSI and micon	F26	CD does not function. This error occurs when the POWER is ON for the CD block and an error is detected after the transmission has started.
5	S5 (TNO) detection error	F27	Tray number does not detect correctly. This error occurs when S5 (Tray number detection) can not be detected normally or when the TRAY No. is uncertain.
6	S1 (STK), S2 (PLY) detection error	F28	CD loading mechanism does not move correctly. This error occurs when S1 (stocker position detection) is not ON or OFF, or S2 (play position detection) is not ON or OFF within the specified time.
7	CD power error	F75	CD does not function. Check if CDRST is H for SELECTOR at CD. If it is not H after 1 second, it shall be memorised as an error. (IC702)

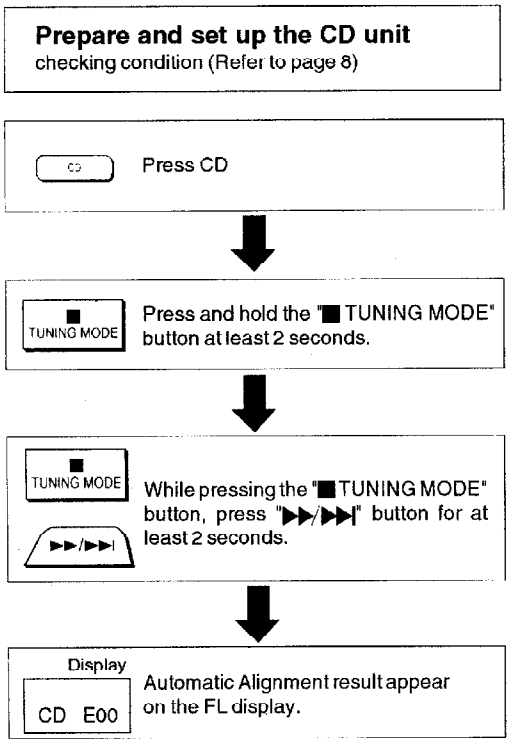
(3) Power Supply related error detection

No.	Error	Error Display	Problem condition
1	POWER AMP output abnormal	F61	When POWER is switched on, power become off automatically. During normal operation, if DC DET become L, PCNT shall become L and the error display on the left shall be displayed. (IC501)

■ CD Test Mode Function

This CD test mode is provided to check CD unit without connecting to changer loading mechanism. This mode shall operate CD PLAY with CD unit being connected only and CD Automatic Alignment result is shown on FL display.

■ How to set CD test mode


Prepare and set up the CD unit
checking condition (Refer to page 8)
CD
Press CD
■ TUNING MODE
Press and hold the "■ TUNING MODE" button at least 2 seconds.
■ TUNING MODE
▶▶/▶▶|
While pressing the "■ TUNING MODE" button, press "▶▶/▶▶|" button for at least 2 seconds.
Display
CD E00
Automatic Alignment result appear on the FL display.

■ CD Automatic Alignment result indication

This function provided indication of error code as the result of Automatic Alignment of CD (Tracking, Focus, Offset, etc.). Based on these error codes, the faulty area can be located .

■ Error code Explanation

- The unit is satisfactory if the error code is E00
- Before testing, make sure that the test disc is free of scratches, dirt and that the optical pick up lens is clean.

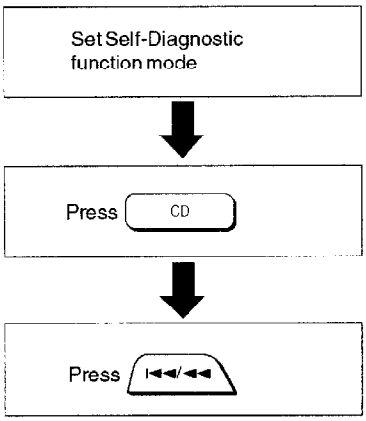
Error code	E00	E01	E02	E03	E04	E05	E06	E07	E08	E09	E0A	E0B	E0C	E0D	E0E	E0F
Focus offset	O	※	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Tracking offset	O	※	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Focus Gain (Rough)	O	※	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Tracking Gain(Rough)	O	-	O	X	O	X	O	X	O	X	O	X	O	X	O	X
Tracking balance	O	-	X	X	O	O	X	X	O	O	X	X	O	O	X	X
Focus balance	O	-	O	O	X	X	X	X	O	O	O	O	X	X	X	X
Tracking or Focus Gain (Fine)	O	-	O	O	O	O	O	O	X	X	X	X	X	X	X	X

O Satisfy　　X Fault　　(※ Fault either items)

■ Reliability test mode for CD / CD CHANGER

This function provided to check CD player and CD CHANGER mechanism. Use this function to check CD player and loading mechanism operation after repair or to find intermittent problem.

■ How to set reliability test mode.



■ Operation and function

In the reliability test mode, the set repeat the following operation:

1) Open tray 1;
2) Fully OPEN condition, CLOSE 1 sec after drawer stops;
3) PLAY the first track of disc 1 for 2 sec;
4) Skip to the last track, play for 2 sec and stop;
5) Open tray 3;
6) Fully OPEN condition, CLOSE 1 sec after drawer stops;
7) PLAY the first track of the disc 3 for 2 sec;
8) Open tray 5;
9) Fully OPEN condition, CLOSE 1 sec after drawer stops;
10) Return to above step 1) after 1 sec.

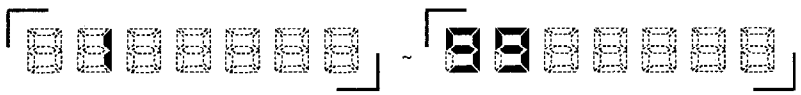
- During this series of operation, the number of its operation shall be shown in the alphanumeric display repeatedly.

It shall start from

- It shall move up one counter when step 1- 10 of the above operations end.

It shall display after has been reached.

- During operation, if TNO SW and tray number detected are different, this error is counted and shown at the upper 2 digits of display. (e.g. Tray 3 pulse could not detected even when tray 3 is operating).



- Execute POWER OFF to cancel the reliability test mode and the self-diagnostic mode.

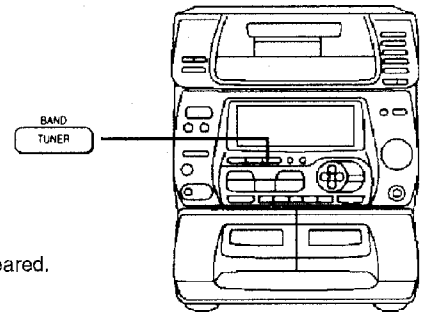
■ Measurements and Adjustments

< TUNER SECTION >

• MW ALLOCATION SETTING

By adjusting the allocation, you can enable this tuner to receive LW broadcasts allocated in 10 kHz steps.

1. Press and hold TUNER, BAND for approximately 5 seconds. The frequency display will be returned to the minimum frequency of the LW band and the display will begin to flash. Keep holding for approximately 5 more seconds.
2. When the display stops flashing, release TUNER, BAND. To return to the original frequency, repeat step 1 to 2.



Note

After changing the allocation setting, the frequencies you previously preset to the memory will be cleared.

< CASSETTE DECK SECTION >

- Measurement Condition
  - Reverse-mode selector switch : ⇄
  - Tape edit : NORMAL
  - Record timer : OFF
  - Dolby NR : OFF
  - Make sure head, capstan and pressure roller are clean.
  - Judgeable room temperature 20 ± 5 °C (68 ± 9 °F)
- Measuring instrument
  - EVM (Electronic Voltmeter)
  - Digital frequency counter
- Test tape
  - Head azimuth adjustment (8 kHz, –20 dB); QZZCFM
  - Tape speed adjustment (3 kHz, –10 dB); QZZCWAT
  - Playback gain adjustment (315 Hz, 0 dB); QZZCFM
  - Normal reference blank tape; QZZCRA
  - CrO_2 tape; QZZCRX

• Head Azimuth Adjustment (Deck 1/2)

Caution :

- Please replace both azimuth adjustment screws (RHE5152ZB) and springs (RMB0331) simultaneously when readjusting the head azimuth. (shown in Fig. 2)
  Even if you wish to readjust the head azimuth without replacing the screws and springs, a fine adjustment cannot be done because of the screw-locking bond adhered to the azimuth screw and spring.
- Please remove the screw-locking bond left on the head base when replacing the azimuth screw.
- If you wish to readjust the head azimuth, be sure to adjust with adhering the cassette tape closely to the mechanism by pushing the center of cassette tape with your finger. (shown in Fig. 3)

1. Playback the azimuth adjustment portion (8 kHz, –20 dB) of the test tape (QZZCFM) in the forward play mode. Vary the azimuth adjusting screw until the output of the R-CH (PB OUT-R) are maximized.
2. Perform the same adjustment in the reverse play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

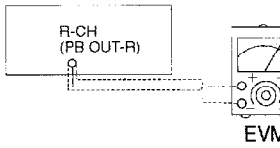


Fig. 1

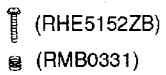


Fig.2

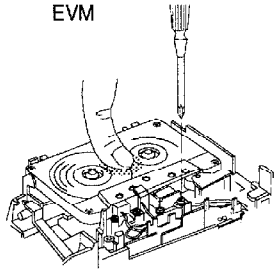


Fig. 3

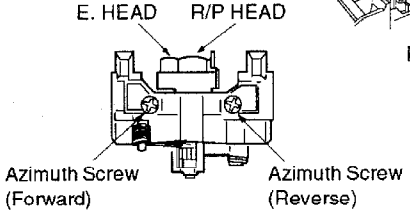


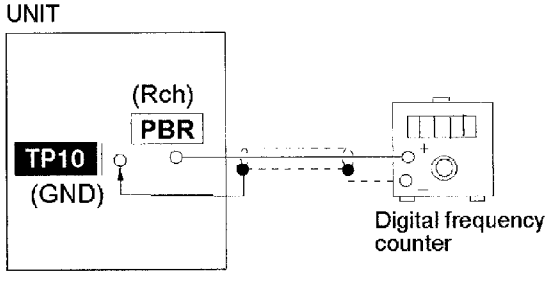
Fig. 4

• Tape Speed Adjustment (Deck 1/2)

1. Set the tape edit button to "NORMAL" position.
2. Insert the test tape (QZZCWAT) to DECK 2 and playback (FWD side) the middle portion of it.
3. Adjust VR201 (DECK 2) for the output value shown below.

   Adjustment target : 2980 ~ 3020 Hz (NORMAL speed)
4. After alignment, assure that the output frequency of the DECK 2 REV and DECK 1 FWD/REV are within ± **60 Hz** of the value of the output frequency of DECK 2 FWD.
5. Set the tape edit button to "HIGH" position.
6. Short-circuit between **TP200** and **GND**
7. Assure that the output from DECK 1/2 are within the standard value.

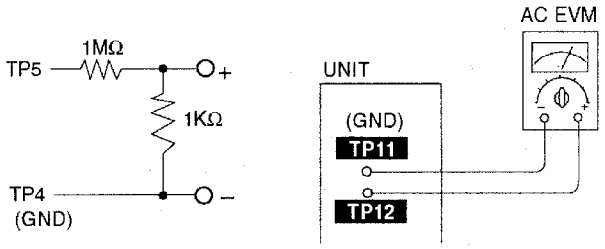
   Standard value : 5000 ± 210 Hz (HIGH speed)



• Bias and Erase Voltage Check

1. Set the unit to "AUX" position.
2. Insert the Normal blank tape (QZZCRA) into DECK 2 and set the unit to "REC" mode (use "REC START/STOP" key).
3. Measure and make sure that the output is within the standard value.
4. Insert the CrO_2 tape (QZZCRX).
5. Repeat steps 2 and 3.

Bias voltage for Deck 2 (Standard value) :	**19 ± 4mV (Normal)**
	27 ± 5mV (CrO_2)
Erase voltage for Deck 2 (Standard value) :	**more than 100mV (Normal)**
	more than 150mV (CrO_2)



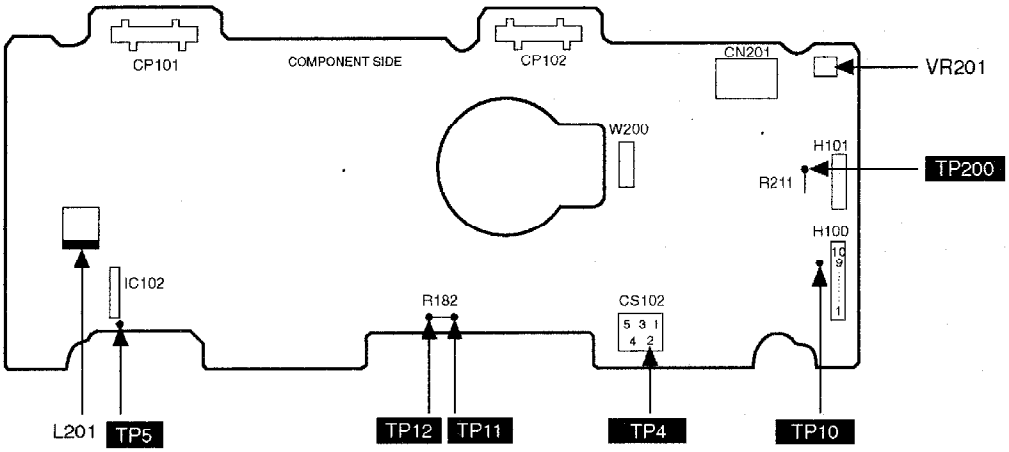
• Bias Frequency Adjustment (Deck 2)

1. Set the unit to "AUX" position.
2. Insert the Normal blank tape (QZZCRA) into DECK 2 and set the unit to "REC" mode (use "REC START/STOP" key).
3. Adjust L201 so that the output frequency is within the standard value.

Standard Value : 98 ± 8 kHz

• Alignment Points

<Cassette Deck Section>



■ Terminal Function of ICs

• IC701 (AN8835SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDA	I	PD signal input
2	PDB	I	PD signal input
3	VCC	I	Power supply connection
4	LPD	I	Laser PD connection
5	LD	O	Power out for LD driving
6	RF	O	RF signal output
7	RFIN	I	RF signal input
8	CAGC	I	AGC loop filter connection
9	ARF	O	RF-AGC output
10	CSBRT	I	Capacitor for detection connection
11	CEA	I	Capacitor connection for HPF amplifier
12	BDO	O	BDO output ("H" : drop out)
13	LDON	I	LD APC input ("H" : ON, "L" : OFF)
14	GND		Ground connection

Pin No.	Mark	I/O	Function
15	/RFDET	O	NRFDET output ("L" : detection)
16	CROSS	O	CROSS output (Track cross signal output)
17	OFTR	O	Off-track output("L" : ON track, "H" : OFF track)
18	VDET	O	VDET output("H" : Vibration detected)
19	ENV	O	RF envelope detection
20	TEBPF	I	Vibration detection signal input
21	CCRS	I	Capacitor for LPF connection
22	TE	O	Tracking error signal output
23	FE	O	Focus error signal output
24	TBAL	I	Tracking balance signal input
25	FBAL	I	Focus balance signal input
26	VREF	O	Reference voltage output
27	PDE	I	PD signal input
28	PDF	I	PD signal input

• IC703 (AN8389SE1) Focus coil / Tracking coil / Traverse motor / Spindle motor driver

Pin No.	Mark	I/O	Function
1	VCC	I	Power supply terminal
2	VREF	I	Reference voltage input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	Ground connection
6	NC	—	Ground connection
7	NRESET	I	Reset input
8	GND	—	Ground connection
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (Not used, open)

Pin No.	Mark	I/O	Function
13	PVCC1	I	Power supply (1) for driver
14	PGND1	—	Ground connection (1) for driver
15	D1–	O	Motor driver (1) reverse-action output
16	D1+	O	Motor driver (1) forward-action output
17	D2–	O	Motor driver (2) reverse-action output
18	D2+	O	Motor driver (2) forward-action output
19	D3–	O	Motor driver (3) reverse-action output
20	D3+	O	Motor driver (3) forward-action output
21	D4–	O	Motor driver (4) reverse-action output
22	D4+	O	Motor driver (4) forward-action output
23	PGND2	—	Ground connection (2) for driver
24	PVCC2	I	Power supply (2) for driver

• IC702 (MN662741RPA) Servo processor / Digital signal processor / Digital filter / D/A converter

Pin No.	Mark	I/O	Function
1	BCLK	O	Serial bit clock terminal (Not used, open)
2	LRCK	O	L/R discriminating signal (Not used, open)
3	SRDATA	O	Serial data (Not used, open)
4	DVDD1	I	Power supply (digital circuit) terminal
5	DVSS1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Microprocessor command clock signal
8	MDATA	I	Microprocessor command data signal
9	MLD	I	Microprocessor command load signal
10	SENSE	O	Sense signal output
			(OFT,FESL,MAGEND,NAJEND,POSAD,SFG)
11	/FLOCK	O	Optical servo condition(focus)("L" : lead-in)
12	/TLOCK	O	Optical servo condition(tracking)("L" : lead-in)
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	External clock signal input for sub-code Q
			register.
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H" : mute)
17	STAT	O	Status signal output
			(CRC,CUE,CLVS,TTSTVP,FCLV,SQCK)
18	/RST	I	Reset input
19	SMCK	O	1/2-divided clock signal of crystal oscillating at
			MSEL = "H" (fSMCK=8.4672MHz)
			1/4-divided clock signal of crystal oscillating at
			MSEL="L" (fSMCK=4.2336MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating
			(fPMCK=88.2kHz) (Not used, open)
21	TRV	O	Traverse servo control output
22	TVD	O	Traverse drive signal output
23	PC	O	Spindle motor ON signal output ("L" : ON)
24	ECM	O	Spindle motor drive signal output
			(forced mode output)
25	ECS	O	Spindle motor drive signal output
			(servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	D/A (drive) output (TVD,ECS,TRD,FOD,
			FBAL,TBAL) Reference voltage input.
30	FBAL	O	Focus balance adjustment output
			(Not used,open)
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input
35	VDET	I	Vibration detection signal input ("H" : detection)

Pin No.	Mark	I/O	Function
36	OFT	I	Off-track signal input ("H" : off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L" : detection)
39	BDO	I	Dropout signal input ("H" : Dropout)
40	LDON	O	Laser on signal output ("H" : ON)
41	TES	O	Tracking error shunt signal output ("H" : shunt)
42	PLAY	O	Play signal out ("H" : PLAY)
43	WVEL	O	Double speed status signal output ("H" : DS)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (Not used, open)
47	DSLF	I/O	DSL loop filter
48	PLLF	I/O	PLL loop filter
49	VCOF	I/O	VCO loop filter (Not used, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (Not used, open)
53	PCK	O	PLL extraction clock ouput (Not used, open)
			(fPCK=4.321 MHz during normal playback)
54	PDO	O	Phase comparison signal of EFM and PCK signals
			(Not used, open)
55	SUBC	O	Sub-code serial data output (Not used, open)
56	SBCK	I	Sub-code frame clock signal output
			(fCLDCK=7.35kHz during normal playback)
57	VSS	—	GND
58	X1	I	Crystal oscillating circuit input (f=16.9344MHz)
59	X2	O	Crystal oscillating circuit output (f=16.9344MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (Not used, open)
62	/CLDCK	O	Clock input for sub-code serial data
			(Not used, open)
63	FCLK	O	Crystal frame clock signal output
			(fCLK=7.35kHz, double=14.7kHz)
64	PFLAG	O	Interpolation flag output ("H" : interpolation)
			(Not used, open)
65	FLAG	O	Flag output (Not used, open)
66	CLVS	O	Spindle servo phase synchronizing signal output
			("H" : CLV, "L" : rough servo) (Not used, open)
67	CRC	O	Sub-code CRC checked output
			("H" : OK, "L" : NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal output
			("H" : ON) (Not used, open)
69	RESY	O	Frame resynchronizing signal output
			(Not used, open)
70	/RST2	I	Reset input through MASH circuit ("L" : Reset)
71	/TEST	I	Test input

Pin No.	Mark	I/O	Function
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input
			(at "H" level, RSEL="H", at "L" level, RESL="L")
77	CSEL	I	Crystal oscillating frequency designation input

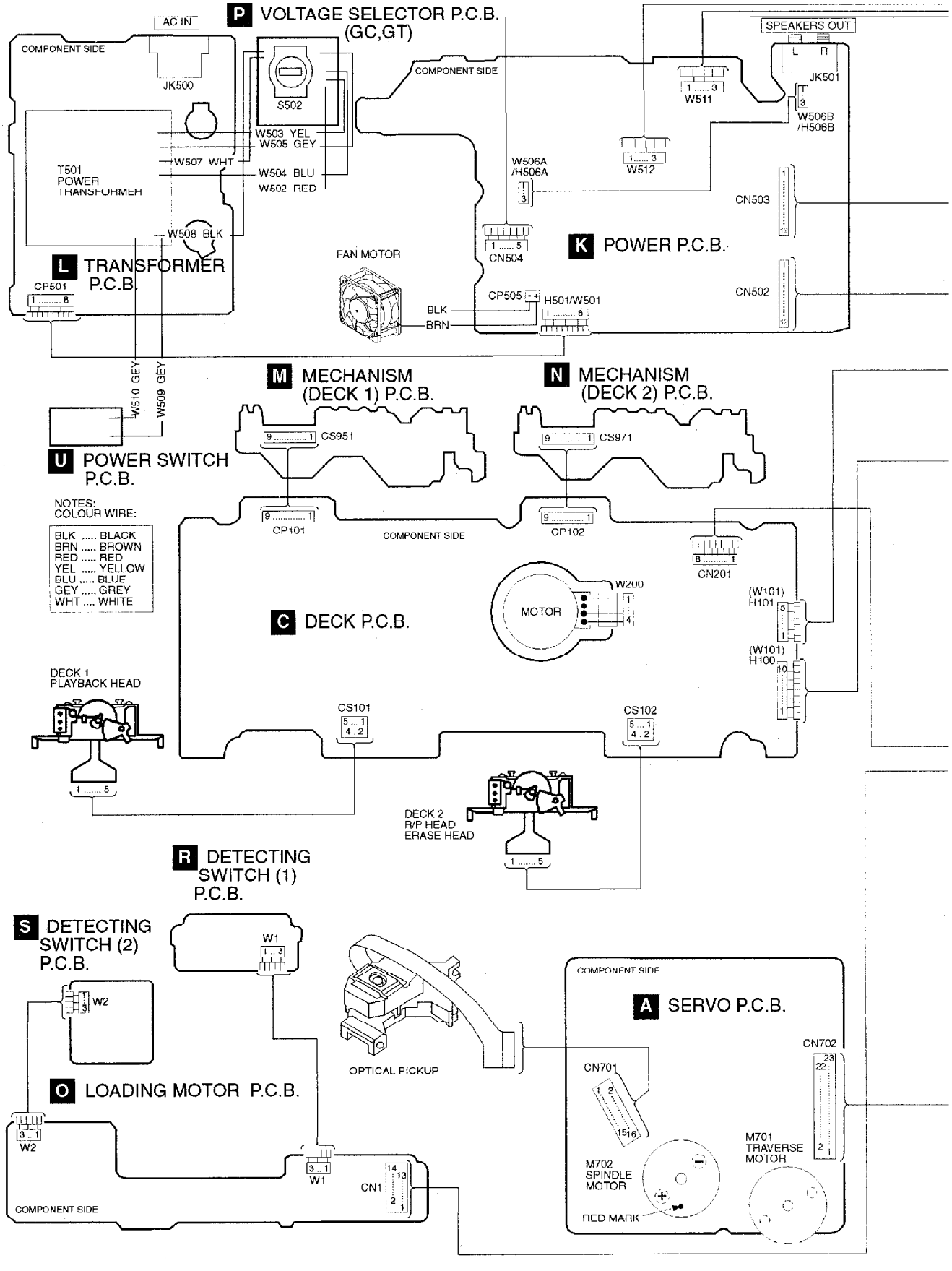
Pin No.	Mark	I/O	Function
			"L" : 16.9344MHz "H" : 33.8688MHz
78	PSEL	I	Test input (normally "L") (Not used, open)
79	MSEL	I	Output mode switching of SUBQ terminal
			("H" : Q code buffer mode)
80	SSEL	I	Output frequency switching for SMCK terminal
			"H" : SMCK=8.4672MHz
			"L" : MCK=4.2336MHz (Not used, open)

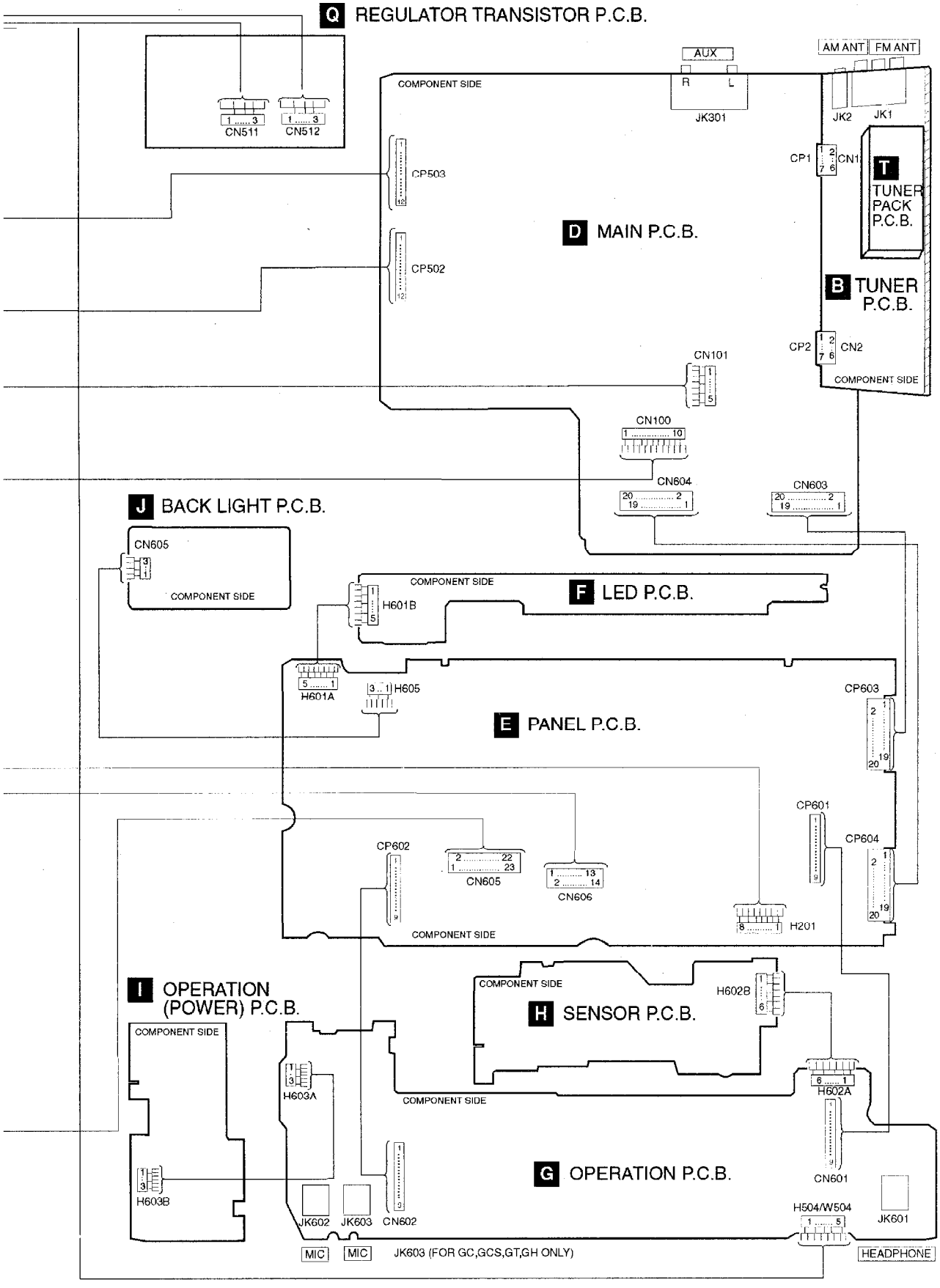
• IC601 (M38197MA136F) System Microprocessor

Pin No.	Mark	I/O	Function
1	DECK 2	I	Mecha condition input(PLAY, FF/RW, MOTOR)
2	DECK 1	I	Mecha condition input(PLAY, FF/RW, MOTOR)
3	TPS	I	TPS input
4	CRT	—	CR timer
5	KEY 4	I	Key 4 input
6	KEY 3	I	Key 3 input
7	KEY 2	I	Key 2 input
8	KEY 1	I	Key 1 input
9	SER 1	O	LED drive clock output
10	VOL OUT	O	Volume control DA output
11	SER 2	O	LED drive data output
12	SER 3	O	LED drive data output
13	SER 4	O	Key control clock output
14	SER 5	O	Key control strobe output
15	SPEANA INPUT	I	Spectrum analyser input
16	CHG SW1	I	CD changer SW input (STK_SW, TUP_SW)
17	CHG SW2	I	CD changer SW input (DR0_SW, PLY_SW, TN0_SW)
18	CDRST	I	CD reset input
19	STATUS	I	CD signal processor status input
20	SQCK	O	CD subcode clock output
21	NC	—	No connection
22	SUBQ	I	CD subcode data input
23	TLOCK	I	CD tracking lock input
24	FLOCK	I	CD focus lock input
25	SENSE	I	CD servo processor sense input
26	MLD/ PLLCE	O	CD command load output
27	MDATA/ PLLDATA	O	CD command data output
28	MCLK/ PLLCLK	O	CD command clock output
29	RESTSW	I	CD REST detect SW input

Pin No.	Mark	I/O	Function
30	BLKCK	I	CD block clock input
31	RMT	I	Remote control signal input
32	DCDET	I	DC detect input
33	P.CONT	O	Power control output
34	/HALT	I	AC failure detect input
35	/RESET	I	RESET input
36	XCIN	I	X'tal oscillator (f = 32.768 kHz sub clock)
37	XCOUT	O	X'tal oscillator (f = 32.768 kHz sub clock)
38	XIN	I	X'tal oscillator (f = 6.0 MHz Main clock)
39	XOUT	O	X'tal oscillator (f = 6.0 MHz Main clock)
40	VSS	—	Ground (0V)
41	MBP1	O	MPU beat proof output 1
42	MBP2	O	MPU beat proof output 2
43	CDGMUTE	—	No connection
44	/CDGRESET	—	No connection
45	CD DMUTE	O	CD digital mute output
46	SPE CONT A	O	Space control A
47	SPE CONT B	O	Space control B
48	SPE CONT C	O	Space control C
49-64	GRD16-GRD1	O	FL digit (grid) drive signal output
65-88	AND1-AND24	O	FL segment (anode) drive output
89	JOG A	I	Jog dial signal input A
90	JOG B	I	Jog dial signal input B
91	VCC	I	Power supply (+5V)
92	REGION IN	I	Area setting terminal
93	MKCLK	O	Cassette deck control clock signal output
94	MKDATA	O	Cassette deck control data output
95	SD IN	I	Tuner signal DET input
96	STEREO IN	I	Tuner stereo DET input
97	DO IN	I	Tuner PLL if data input
98	VP	I	Power input (-30V)
99	VSS	—	Ground (0V)
100	VREF	I	Reference for A-D

■ Wiring Connection Diagram

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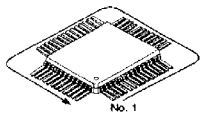
AUX
R
L
JK301
AM ANT
FM ANT
JK2
JK1
CP503
CP502
D MAIN P.C.B.
CP1
CN1
T TUNER PACK P.C.B.
B TUNER P.C.B.
CP2
CN2
COMPONENT SIDE
CN101
CN100
CN604
CN603
J BACK LIGHT P.C.B.
CN605
COMPONENT SIDE
COMPONENT SIDE
F LED P.C.B.
H601B
H601A
H605
E PANEL P.C.B.
CP603
CP601
CP604
CP602
CN605
CN606
H201
COMPONENT SIDE
I OPERATION (POWER) P.C.B.
COMPONENT SIDE
COMPONENT SIDE
H602B
H SENSOR P.C.B.
H602A
H603A
COMPONENT SIDE
H603B
G OPERATION P.C.B.
CN601
JK602
JK603
CN602
H504/W504
JK601
MIC
MIC
JK603 (FOR GC,GCS,GT,GH ONLY)
HEADPHONE

■ Terminal Guide of ICs, Transistors and Diodes

M38197MA136F(100P)
MN662741RPA(80P)



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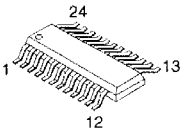

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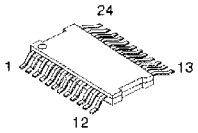

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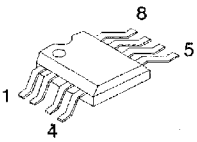

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BU4052BCF-E2 (16P)
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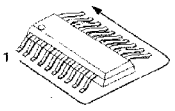

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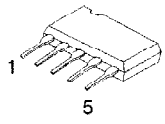

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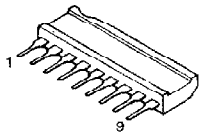

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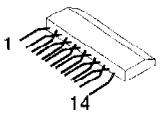

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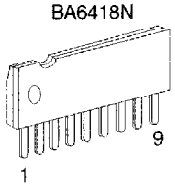

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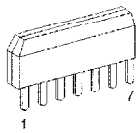

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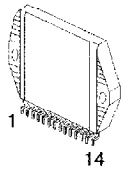

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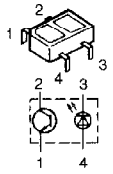

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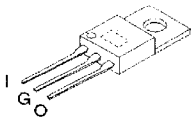

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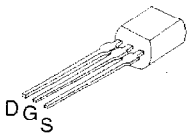

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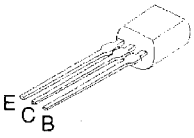

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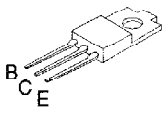

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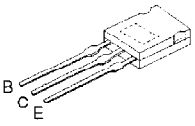

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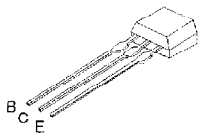

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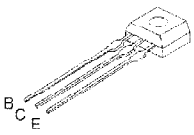

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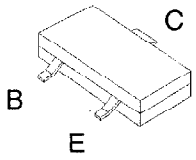

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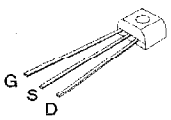

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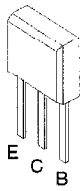

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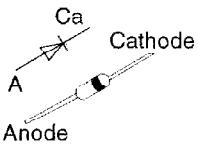

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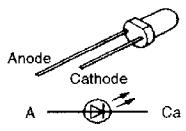

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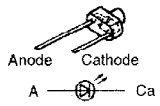

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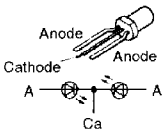

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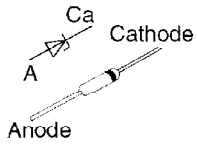
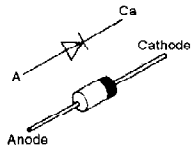
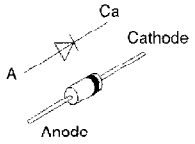


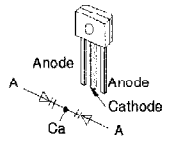
RL1N4003N02



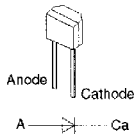
1D3E
1N5402BM21



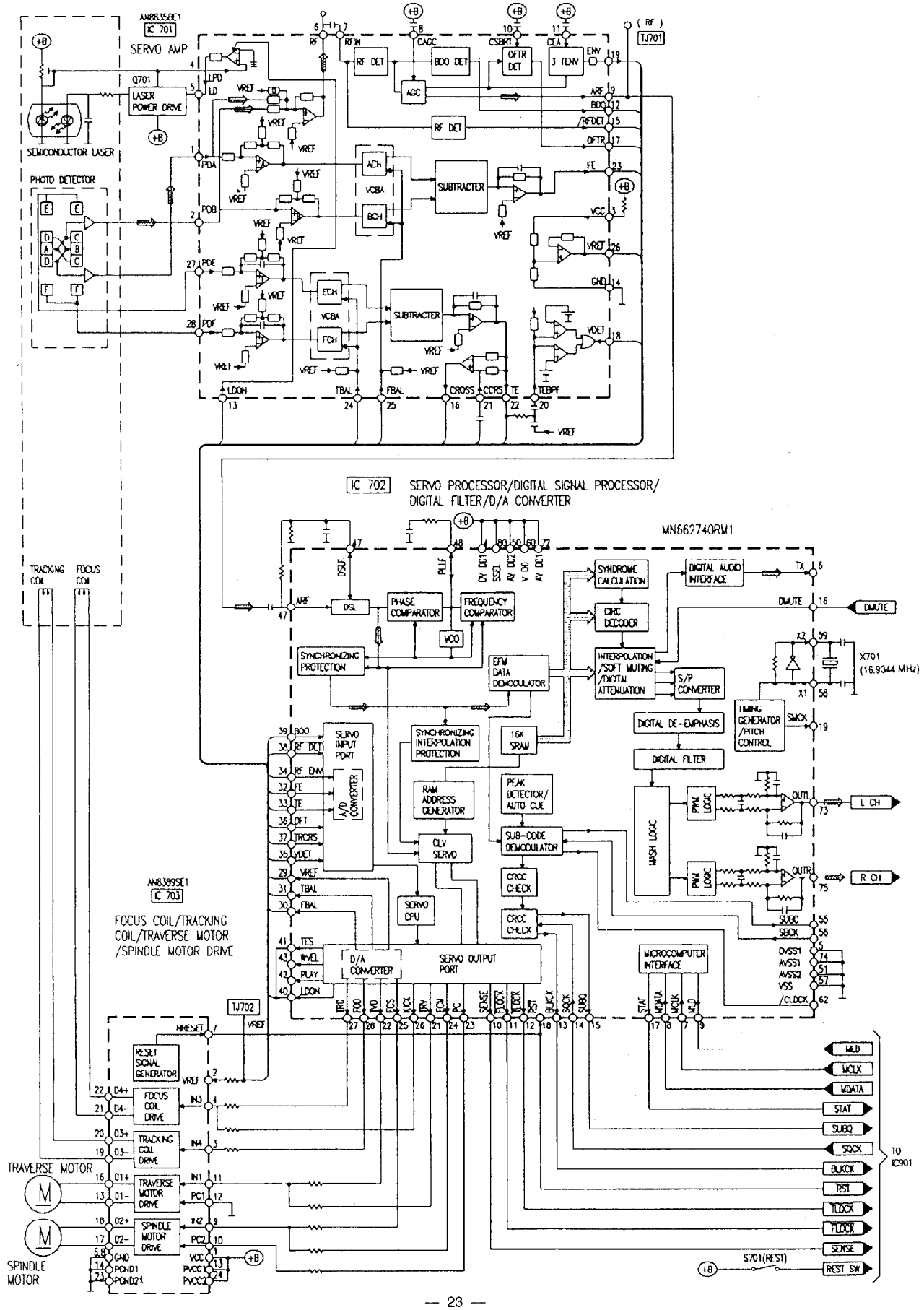
SVC211SPA-AL

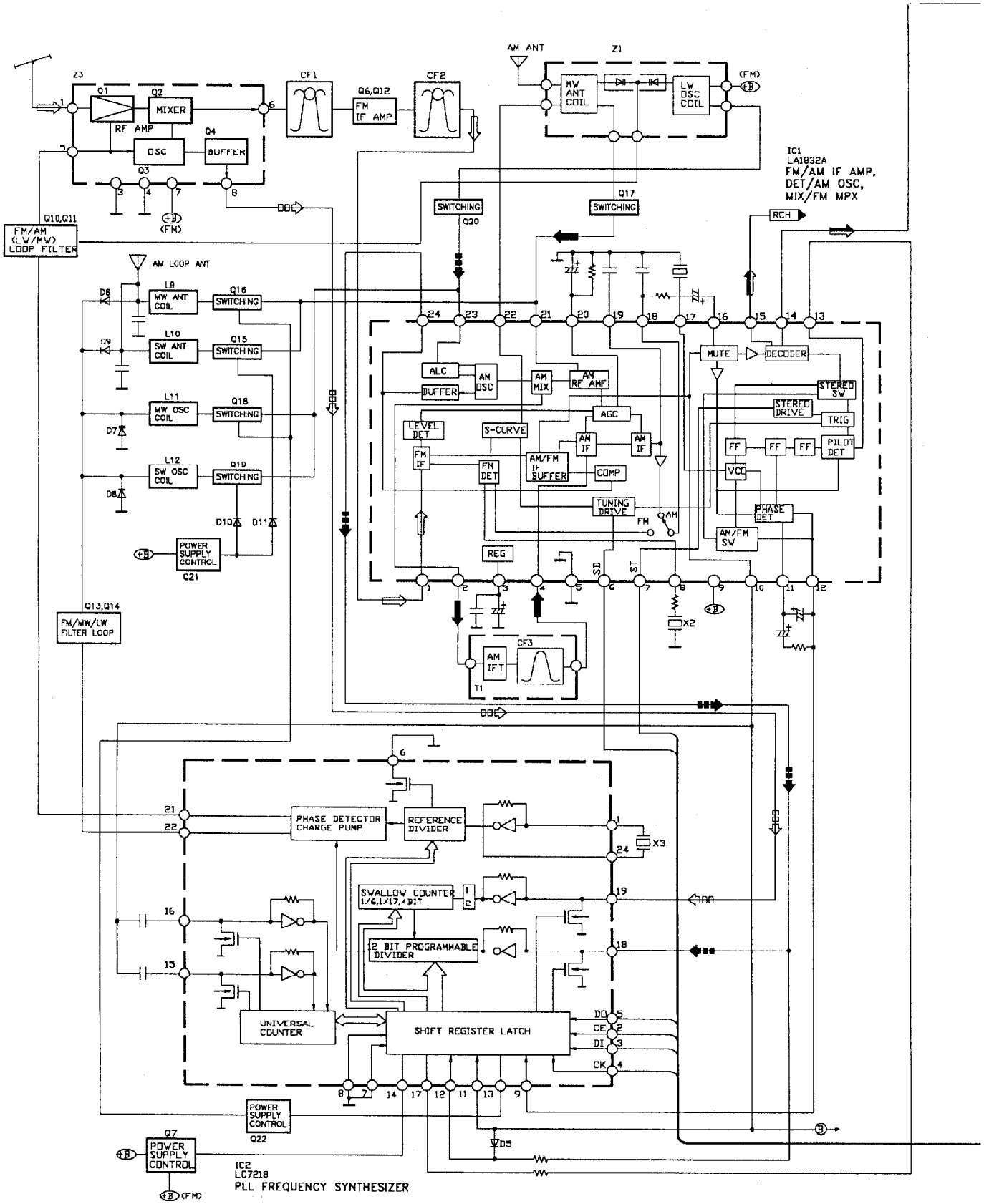


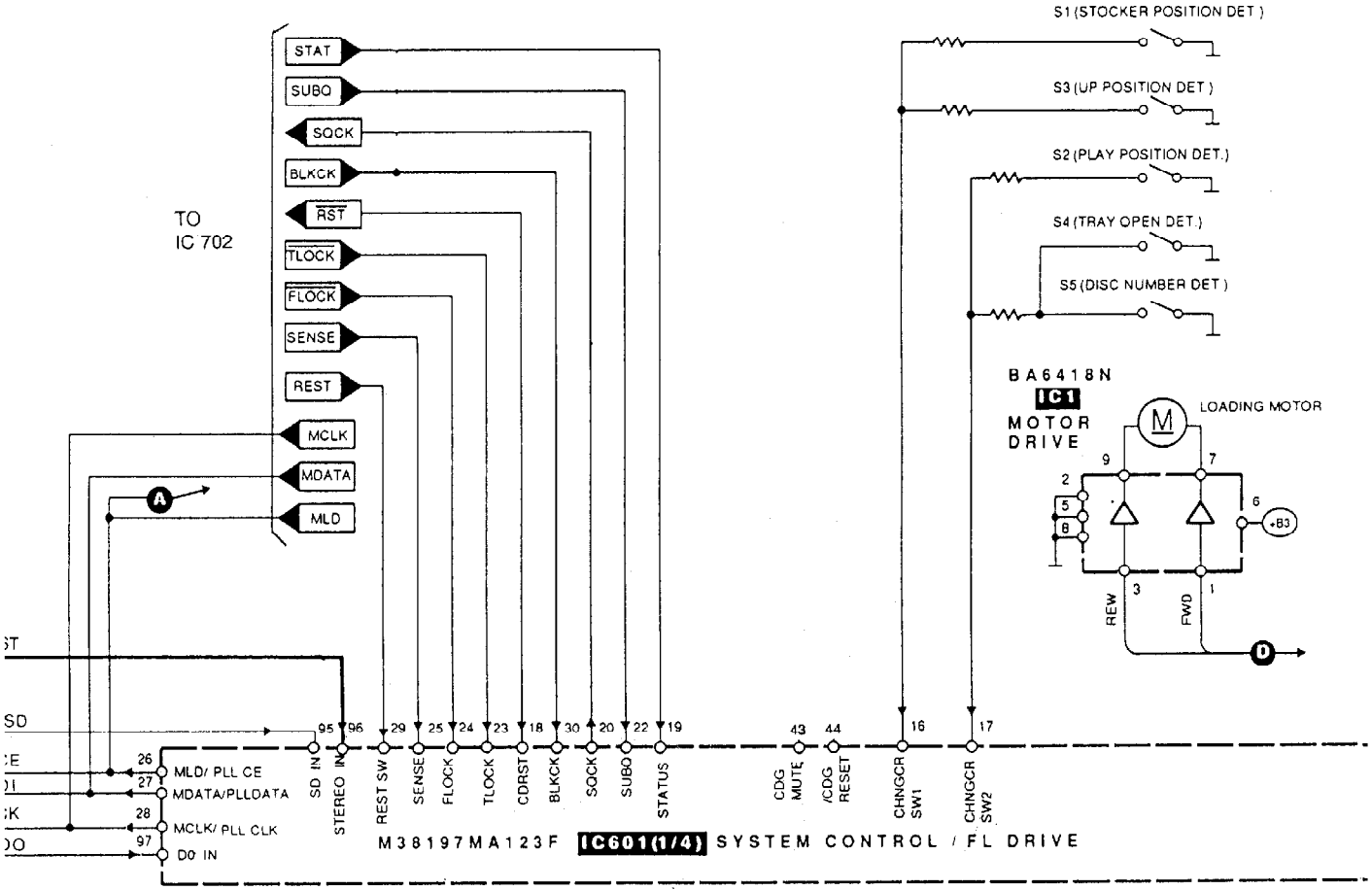
RVDSVC321

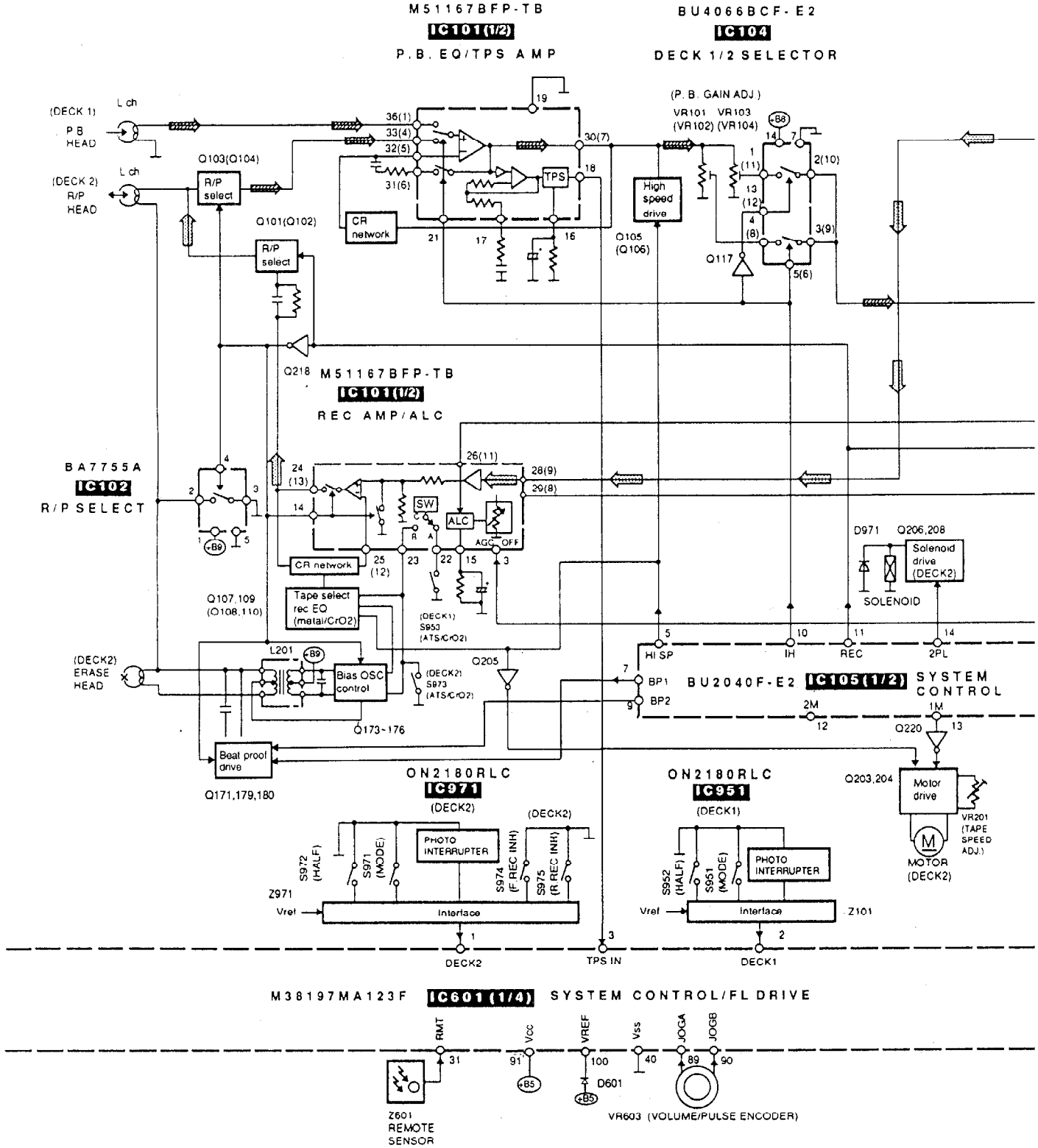


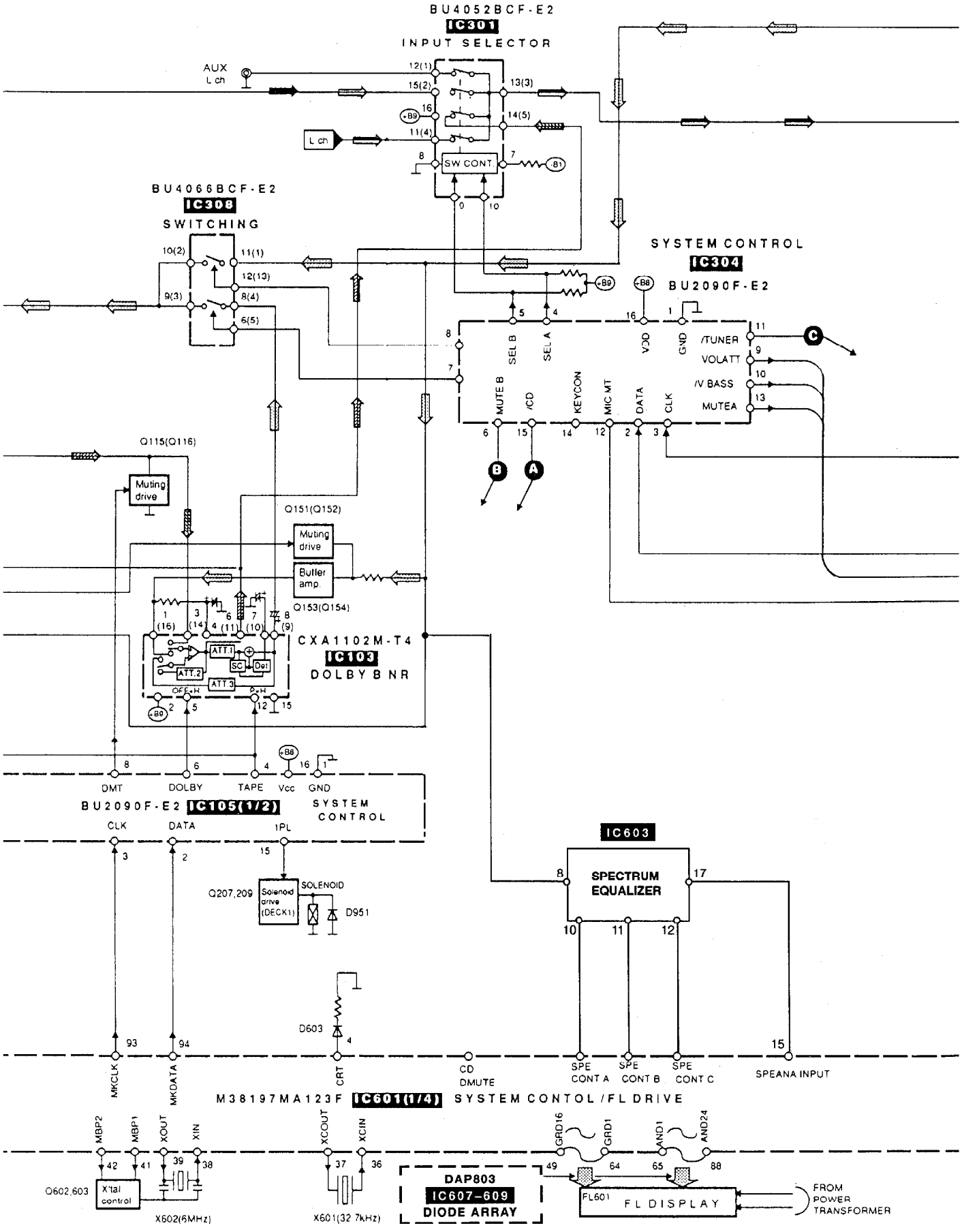
■ Block Diagram

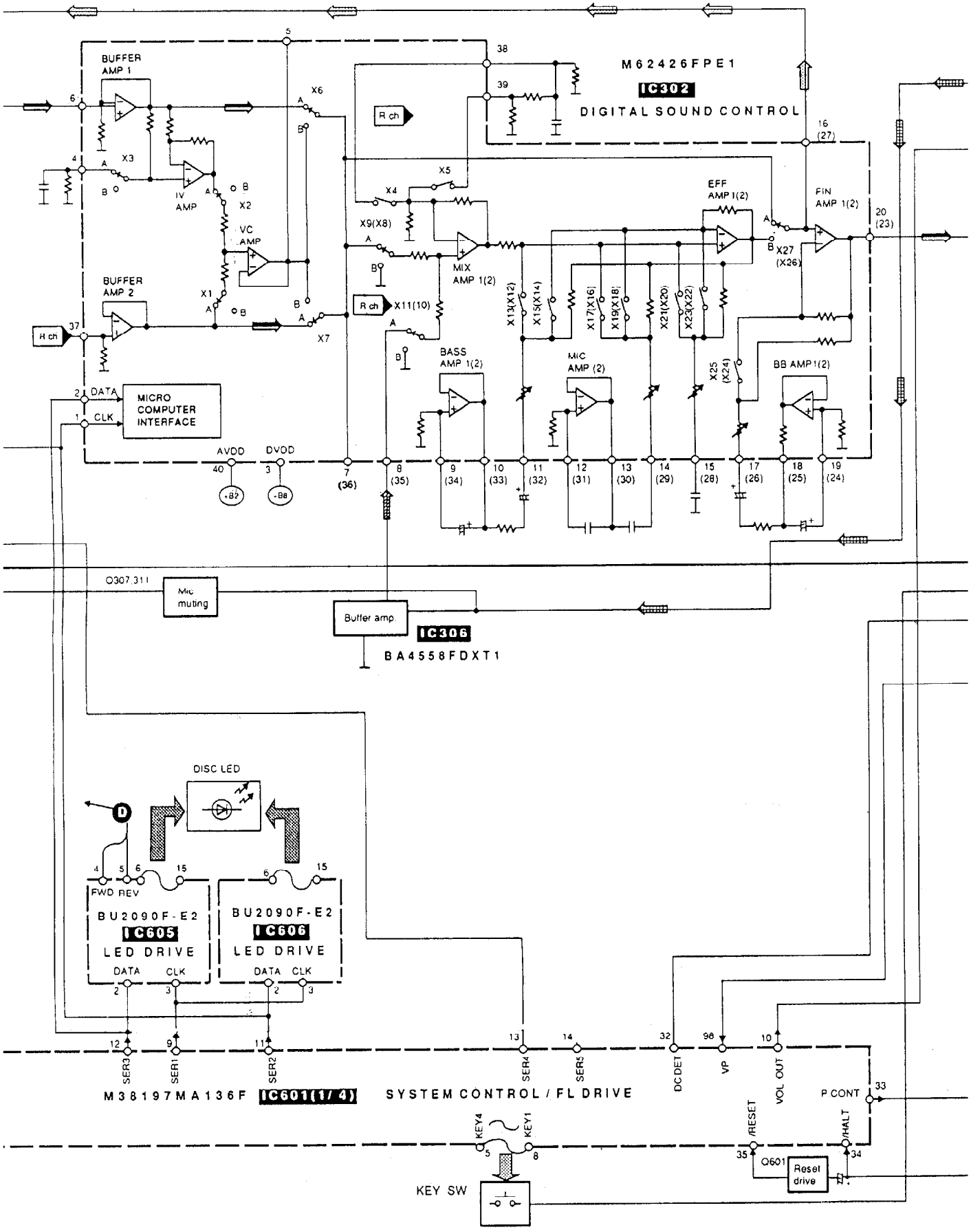


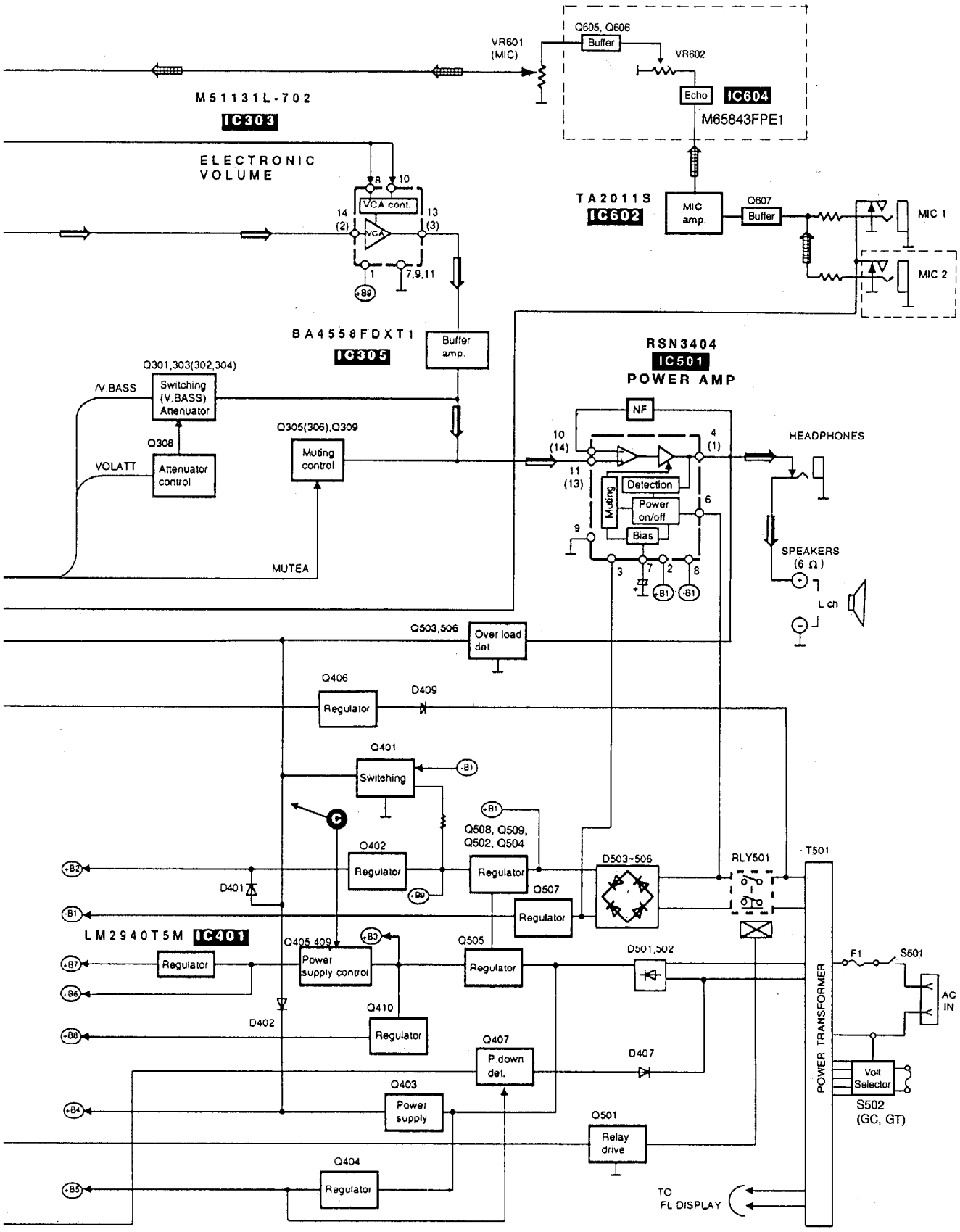

AM ANT
Z1
MW ANT COIL
LW OSC COIL
(FM)
Z3
Q1
Q2
MIXER
RF AMP
Q4
OSC
BUFFER
Q3
CF1
CF2
Q6,Q12
FM IF AMP
IC1
LA1832A
FM/AM IF AMP, DET/AM OSC, MIX/FM MPX
SWITCHING
Q20
Q17
RCH
Q10,Q11
FM/AM (LW/MW) LOOP FILTER
AM LOOP ANT
L9
MW ANT COIL
Q16
L10
SW ANT COIL
Q15
L11
MW OSC COIL
Q18
L12
SW OSC COIL
Q19
D6
D9
D7
D8
D10
D11
POWER SUPPLY CONTROL
Q21
Q13,Q14
FM/MW/LW FILTER LOOP
ALC
AM OSC
BUFFER
AM MIX
AM RF AMP
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
AGC
LEVEL DET
S-CURVE
AM IF
FM IF
FM DET
AM/FM IF BUFFER
COMP
FF
PILOT DET
VCC
TUNING DRIVE
PHASE DET
AM/FM SW
REG
X2
CF3
AM IFT
T1
PHASE DETECTOR CHARGE PUMP
REFERENCE DIVIDER
X3
SWALLOW COUNTER 1/6,1/17,4 BIT
12 BIT PROGRAMMABLE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
DO
CE
DI
CK
Q22
D5
Q7
IC2
LC7218
PLL FREQUENCY SYNTHESIZER


S1 (STOCKER POSITION DET.)
S3 (UP POSITION DET.)
S2 (PLAY POSITION DET.)
S4 (TRAY OPEN DET.)
S5 (DISC NUMBER DET.)
TO
IC 702
STAT
SUBQ
SQCK
BLKCK
RST
TLOCK
FLOCK
SENSE
REST
MCLK
MDATA
MLD
BA6418N
IC1
MOTOR
DRIVE
LOADING MOTOR
REW
FWD
+B3
MLD/ PLL CE
MDATA/PLLDATA
MCLK/ PLL CLK
D0 IN
SD IN
STEREO IN
REST SW
SENSE
FLOCK
TLOCK
CDRST
BLKCK
SQCK
SUBQ
STATUS
CDG MUTE
/CDG RESET
CHNGCR SW1
CHNGCR SW2
M38197MA123F IC601(1/4) SYSTEM CONTROL / FL DRIVE


M51167BFP-TB
IC101(1/2)
P.B. EQ/TPS AMP
BU4066BCF-E2
IC104
DECK 1/2 SELECTOR
(DECK 1)
L ch
P B HEAD
(DECK 2)
R/P HEAD
Q103(Q104)
R/P select
Q101(Q102)
CR network
TPS
High speed drive
(P. B. GAIN ADJ.)
VR101 VR103
(VR102) (VR104)
Q105 (Q106)
Q117
Q218
M51167BFP-TB
IC101(1/2)
REC AMP/ALC
BA7755A
IC102
R/P SELECT
SW
ALC
AGC OFF
Tape select rec EQ (metal/CrO2)
Q107,109 (Q108,110)
(DECK1) S953 (ATS/CrO2)
(DECK2) ERASE HEAD
L201
Bias OSC control
(DECK2) S973 (ATS/CrO2)
Q205
Q173-176
Beat proof drive
Q171,179,180
D971
Q206,208
Solenoid drive (DECK2)
SOLENOID
HI SP
IH
REC
2PL
BP1
BP2
BU2040F-E2
IC105(1/2)
SYSTEM CONTROL
2M
1M
Q220
ON2180RLC
IC971
(DECK2)
PHOTO INTERRUPTER
S972 (HALF)
S971 (MODE)
S974 (F REC INH)
S975 (R REC INH)
Z971
Vref
Interface
ON2180RLC
IC951
(DECK1)
S952 (HALF)
S951 (MODE)
Z101
Q203,204
Motor drive
VR201 (TAPE SPEED ADJ.)
MOTOR (DECK2)
DECK2
TPS IN
DECK1
M38197MA123F
IC601(1/4)
SYSTEM CONTROL/FL DRIVE
RMT
Vcc
VREF
Vss
JOGA
JOGB
D601
Z601 REMOTE SENSOR
VR603 (VOLUME/PULSE ENCODER)


BU4052BCF-E2
IC301
INPUT SELECTOR
AUX
L ch
L ch
SW CONT
BU4066BCF-E2
IC308
SWITCHING
SYSTEM CONTROL
IC304
BU2090F-E2
/TUNER
VOLATT
/V BASS
MUTEA
SEL B
SEL A
V3D
GND
MUTE B
/CD
KEYCON
MIC MT
DATA
CLK
Q115(Q116)
Muting drive
Q151(Q152)
Muting drive
Buffer amp.
Q153(Q154)
CXA1102M-T4
IC103
DOLBY B NR
ATT.1
ATT.2
ATT.3
SC
Det
DMT
DOLBY
TAPE
Vcc
GND
BU2090F-E2 IC105(1/2)
SYSTEM CONTROL
CLK
DATA
1PL
Q207,209
Solenoid drive (DECK1)
SOLENOID
D951
IC603
SPECTRUM EQUALIZER
D603
MKCLK
MKDATA
CRT
CD DMUTE
SPE CONT A
SPE CONT B
SPE CONT C
SPEANA INPUT
M38197MA123F IC601(1/4) SYSTEM CONTOL /FL DRIVE
MBP2
MBP1
XOUT
XIN
XCOUT
XCIN
GRD16
GRD1
AND1
AND24
Q602,603
X'tal control
X602(6MHz)
X601(32.7kHz)
DAP803
IC607-609
DIODE ARRAY
FL601
FL DISPLAY
FROM POWER TRANSFORMER

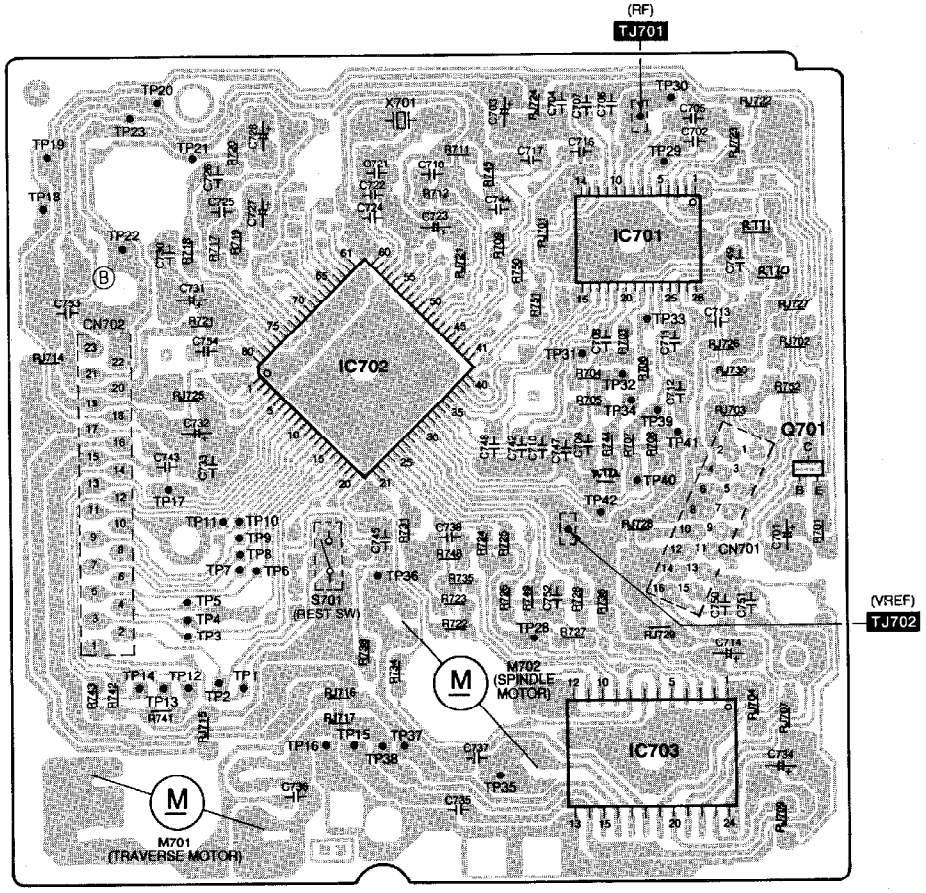

M62426FPE1
IC302
DIGITAL SOUND CONTROL
BUFFER AMP 1
BUFFER AMP 2
IV AMP
VC AMP
MIX AMP 1(2)
EFF AMP 1(2)
FIN AMP 1(2)
BASS AMP 1(2)
MIC AMP (2)
BB AMP1(2)
R ch
MICRO COMPUTER INTERFACE
DATA
CLK
AVDD
DVDD
Q307.311
Mic muting
Buffer amp.
IC306
BA4558FDXT1
DISC LED
FWD REV
BU2090F-E2
IC605
LED DRIVE
IC606
M38197MA136F
IC601(1/4)
SYSTEM CONTROL / FL DRIVE
SER3
SER1
SER2
SER4
SER5
DC DET
VP
VOL OUT
P CONT
/RESET
/HALT
KEY4
KEY1
KEY SW
Q601
Reset drive



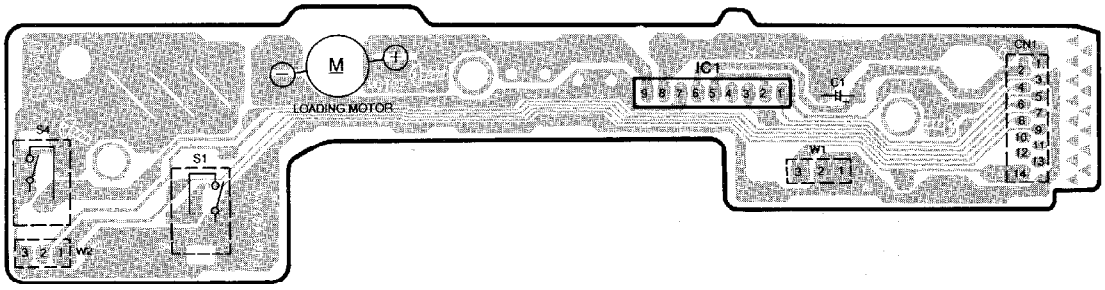
NOTE: FM SIGNAL LINE, FM OSC SIGNAL LINE, AM SIGNAL LINE, AM OSC SIGNAL LINE, CD SIGNAL LINE, CDG SIGNAL LINE, RECORDING SIGNAL LINE, PLAYBACK SIGNAL LINE, MIC SIGNAL

■ Printed Circuit Board

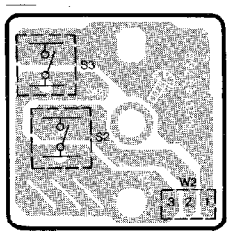
A SERVO P.C.B. (REPX0109)



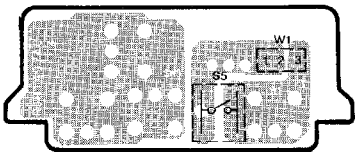
O LOADING MOTOR P.C.B. (REP2182A-N)



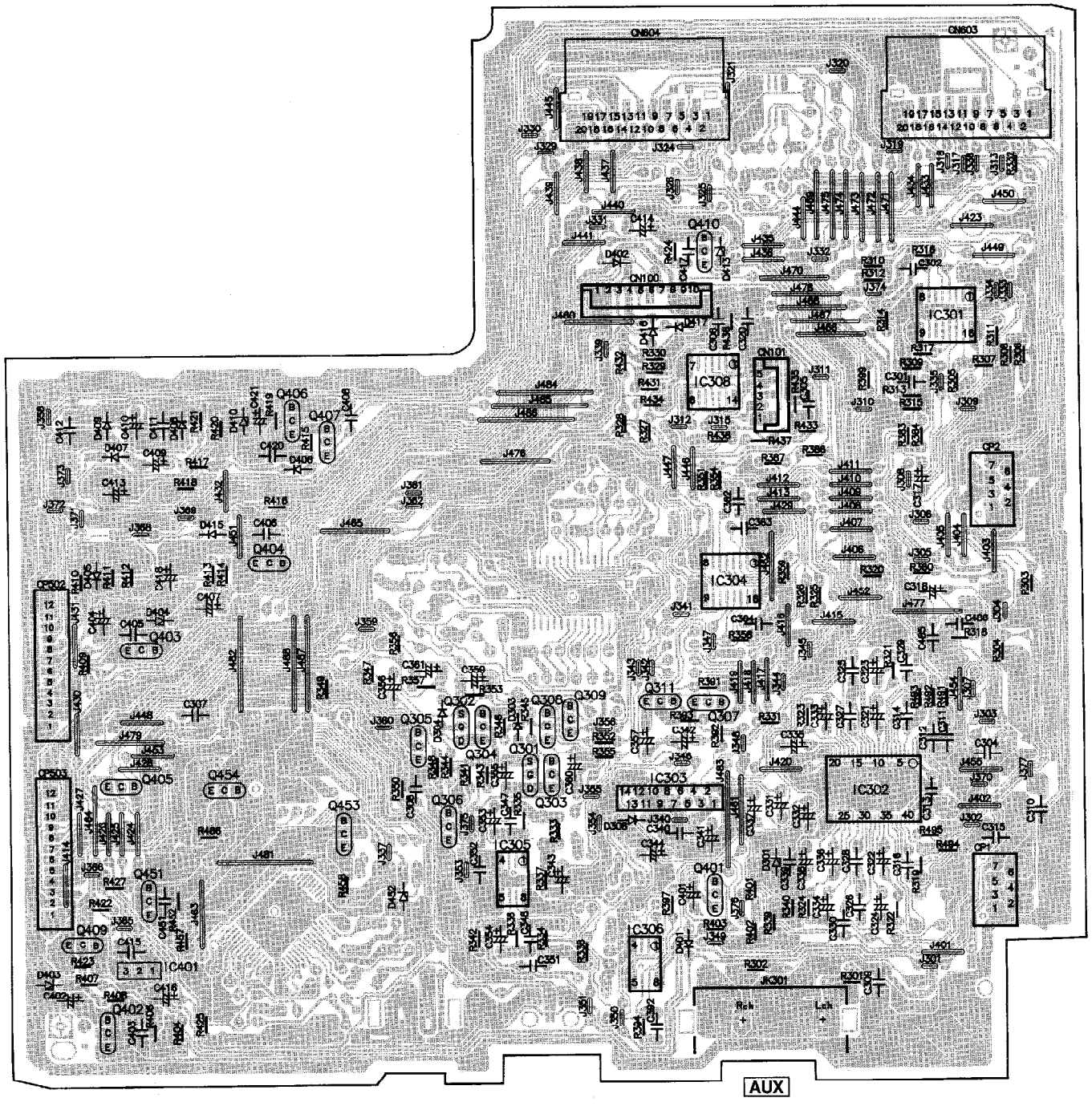
S DETECTING SWITCH (2) P.C.B. (REP2182A-N)



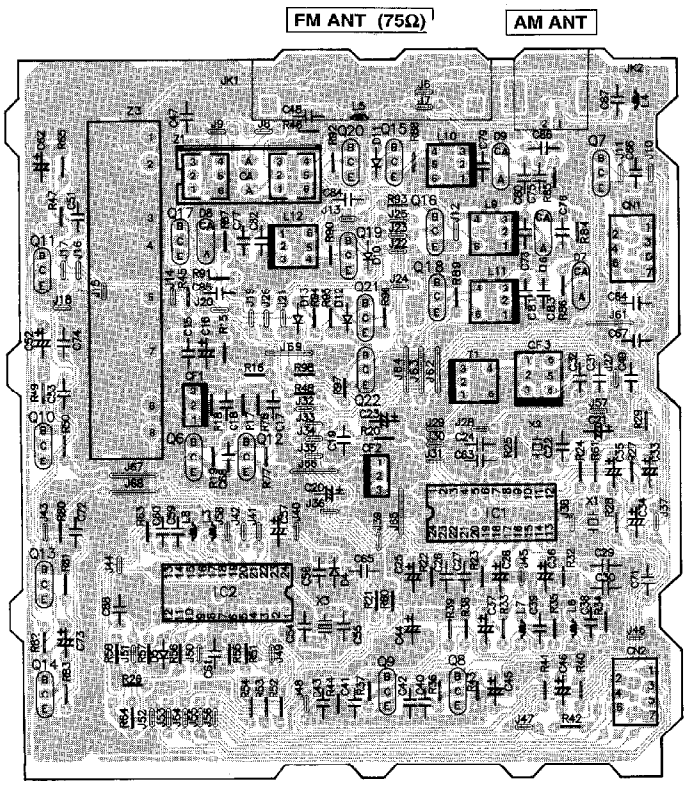
R DETECTING SWITCH (1) P.C.B. (REP2182A-N)



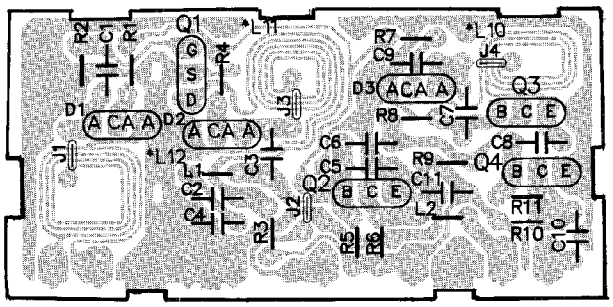
D MAIN P.C.B. (REP2196G)



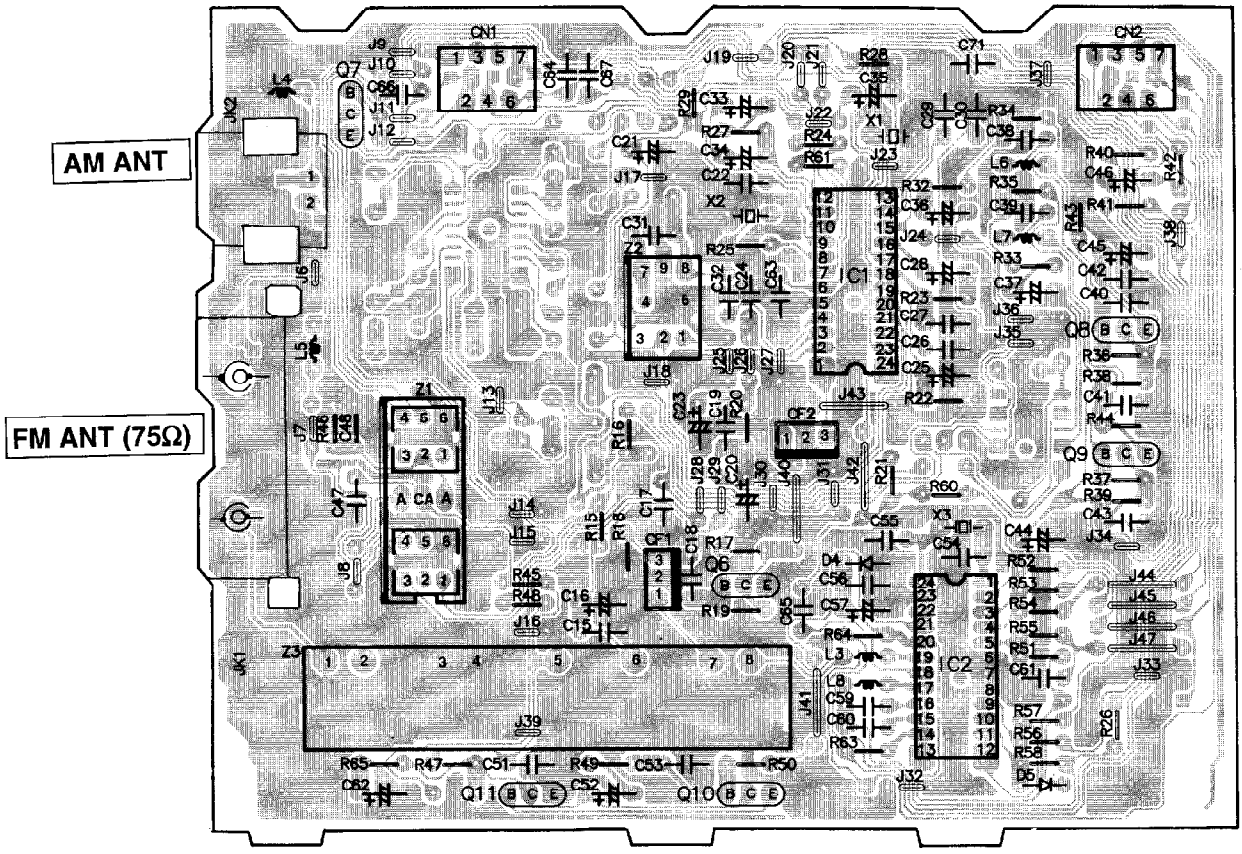
B TUNER P.C.B. (REP2000F)...GC,GT,GCS



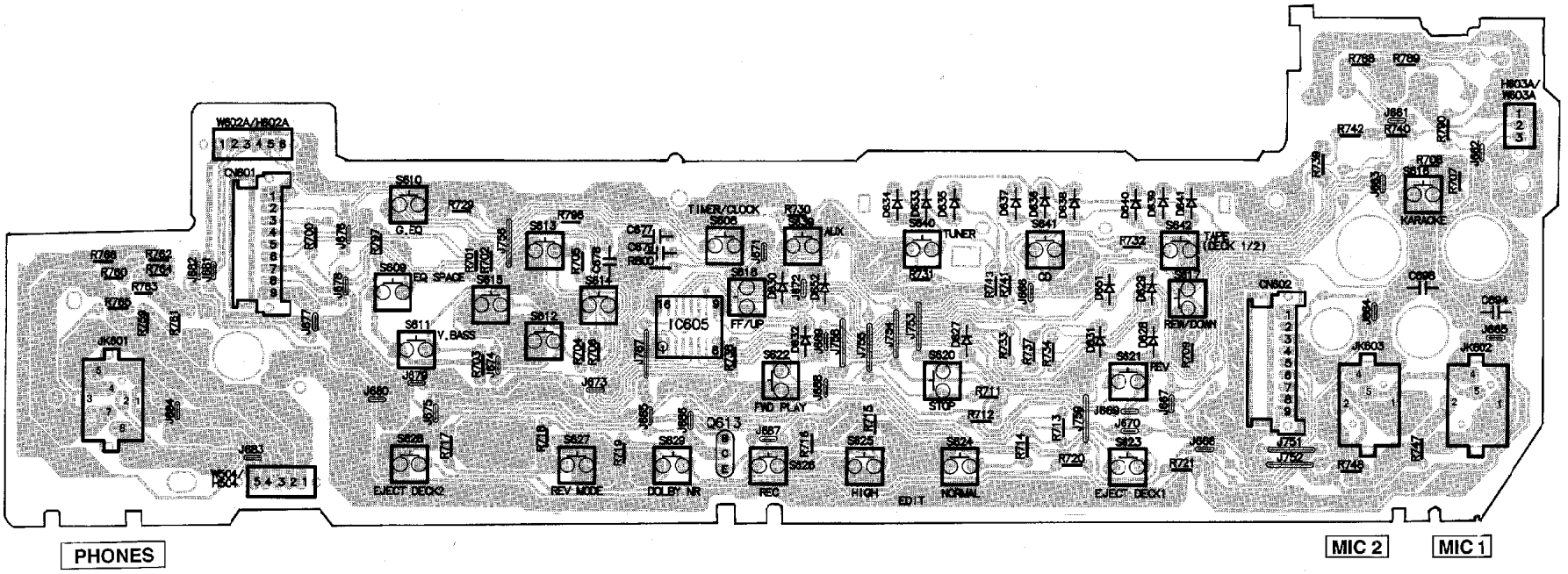
T TUNER PACK P.C.B. (REP1999B)



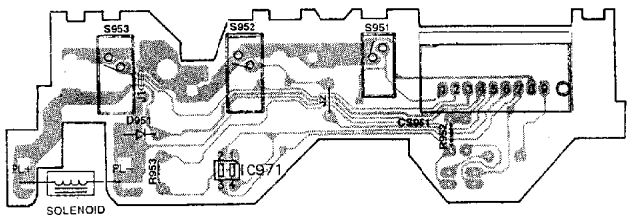
B TUNER P.C.B. (REP2000D)...GN



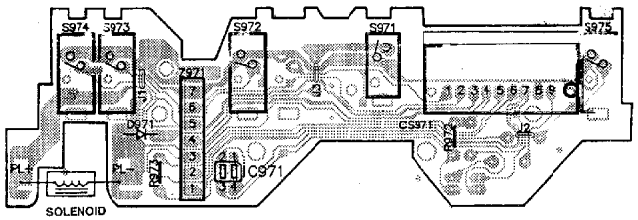
G OPERATION P.C.B. (REP2199H)...GC,GT,GCS
(REP2199J)...GN



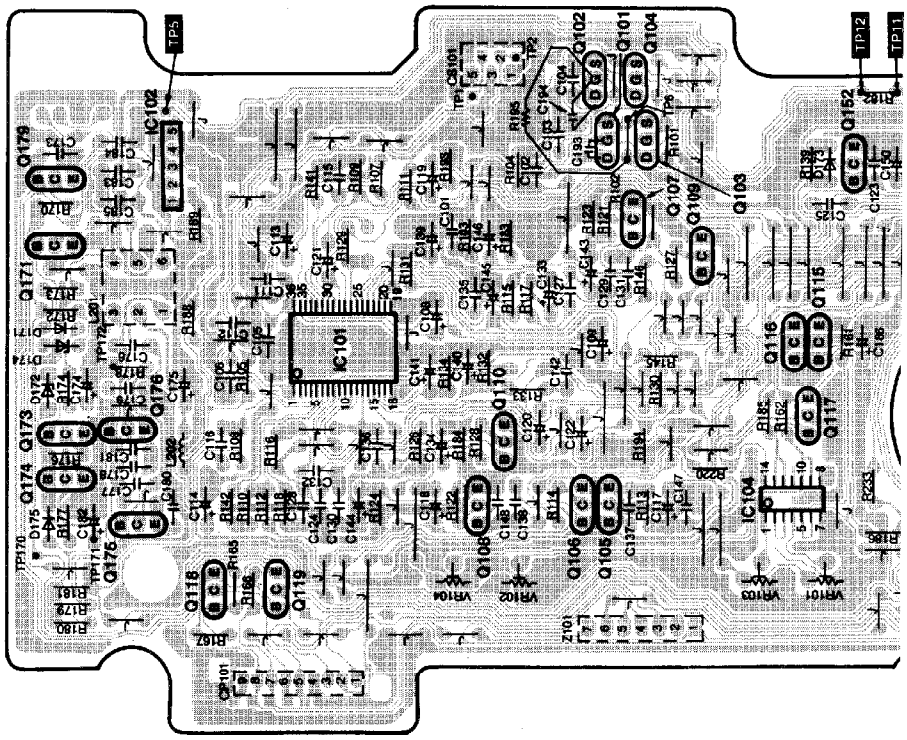
M MECHANISM (DECK 1) P.C.B. (REPX0108A)



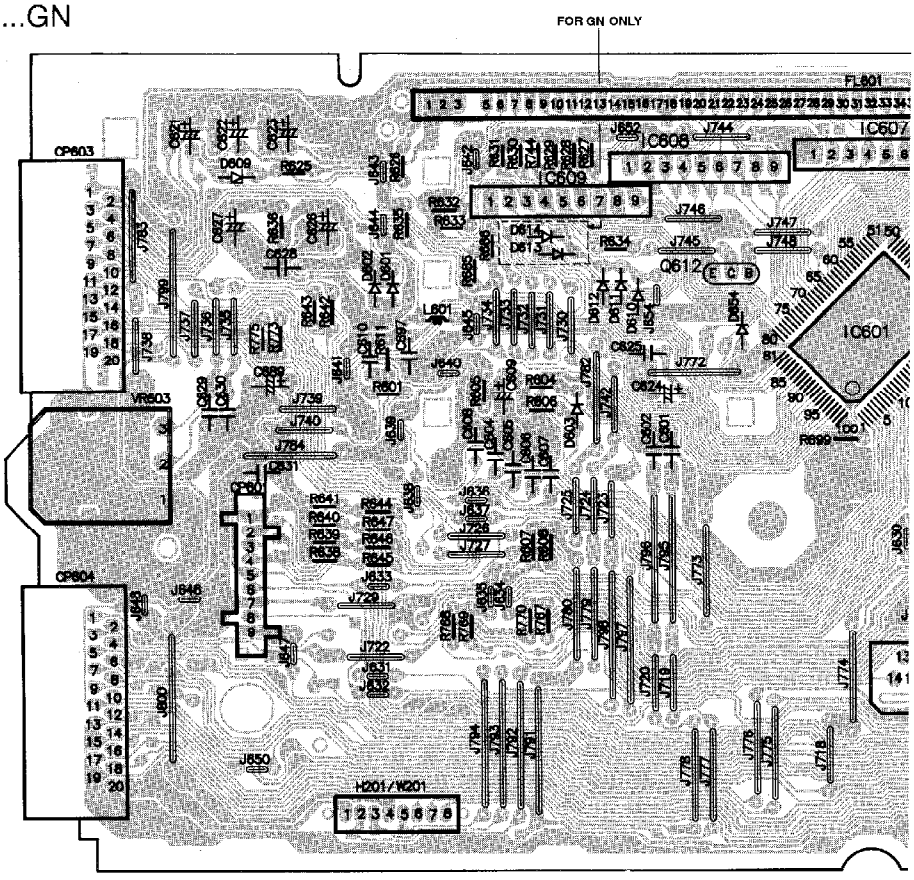
N MECHANISM (DECK 2) P.C.B. (REPX0108)

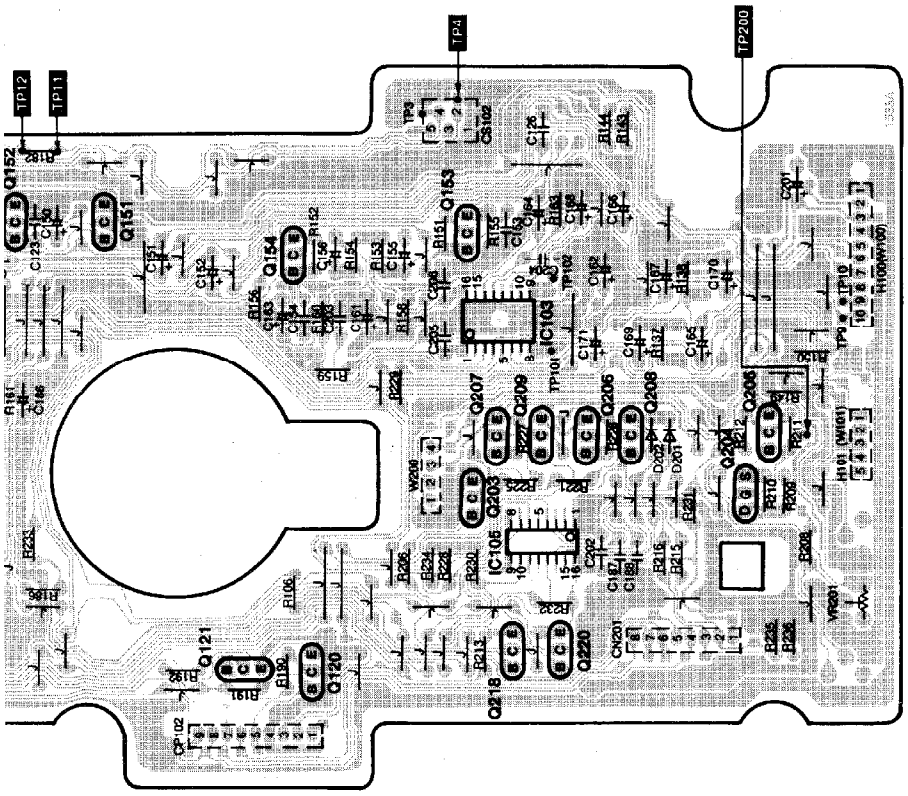


C DECK P.C.B. (REP2200B)



E PANEL P.C.B. (REP2199H)...GC,GT,GCS
(REP2199J)...GN




TP12
TP11
TP4
TP200
Q152
Q151
Q153
Q154
Q155
Q156
Q157
Q158
Q159
Q160
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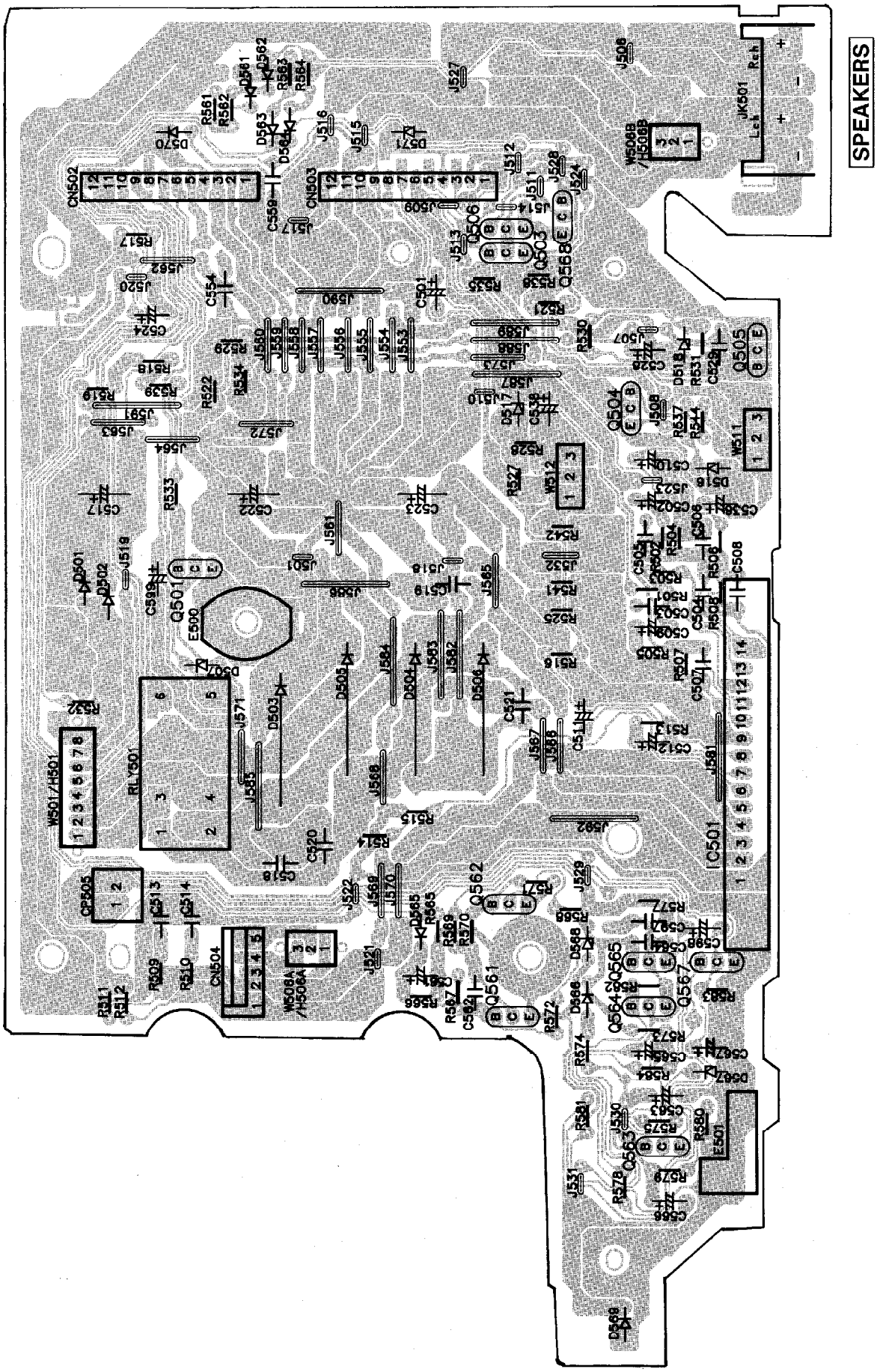
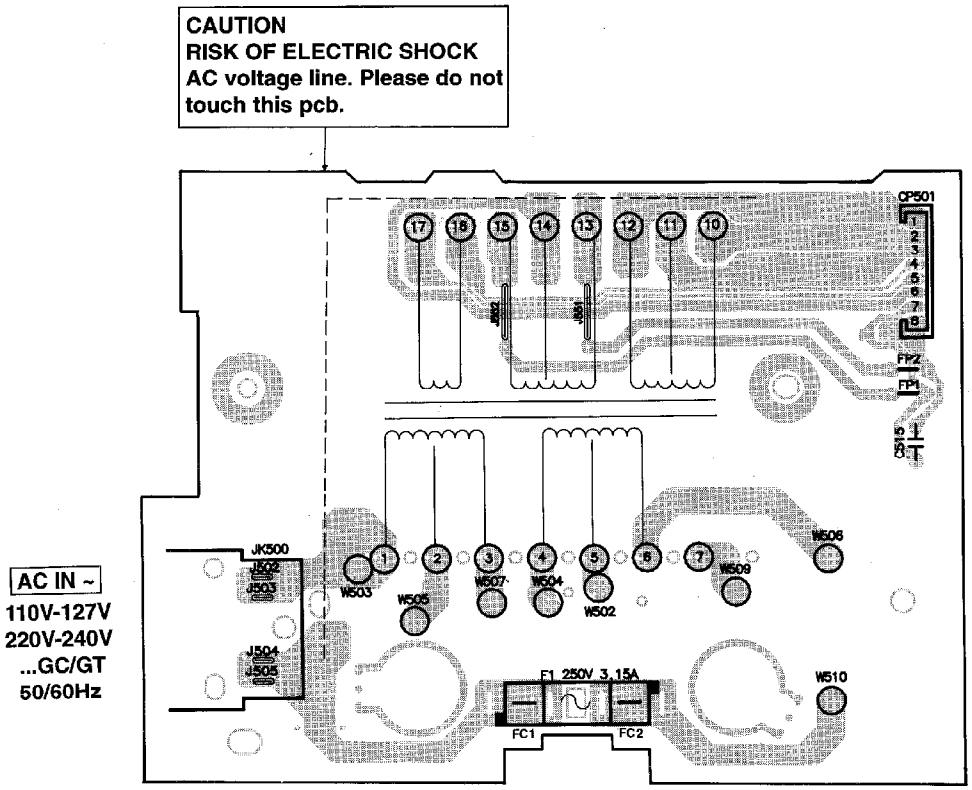
Q162
Q163
Q164
Q165
Q166
Q167
Q168
Q169
Q170
Q171
Q172
Q173
Q174
Q175
Q176
Q177
Q178
Q179
Q180
Q181
Q182
Q183
Q184
Q185
Q186
Q187
Q188
Q189
Q190
Q191
Q192

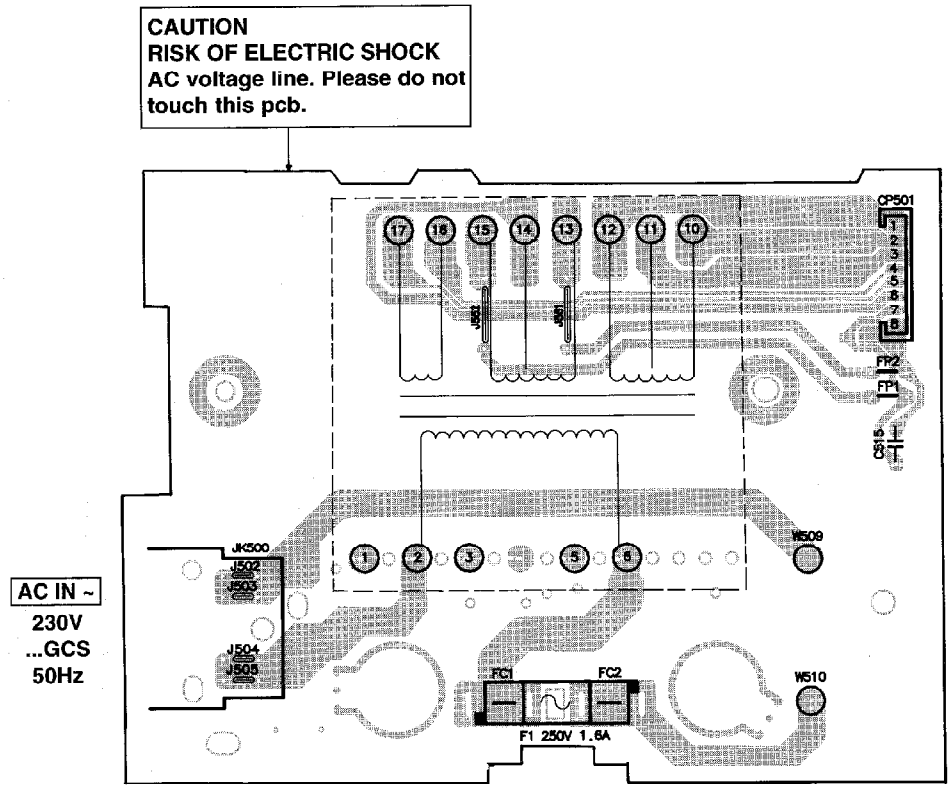
K POWER P.C.B. (REP2197J)...GC,GT
(REP2197L)...GCS
(REP2197M)...GN



L TRANSFORMER P.C.B. (REP2197J)...GC,GT

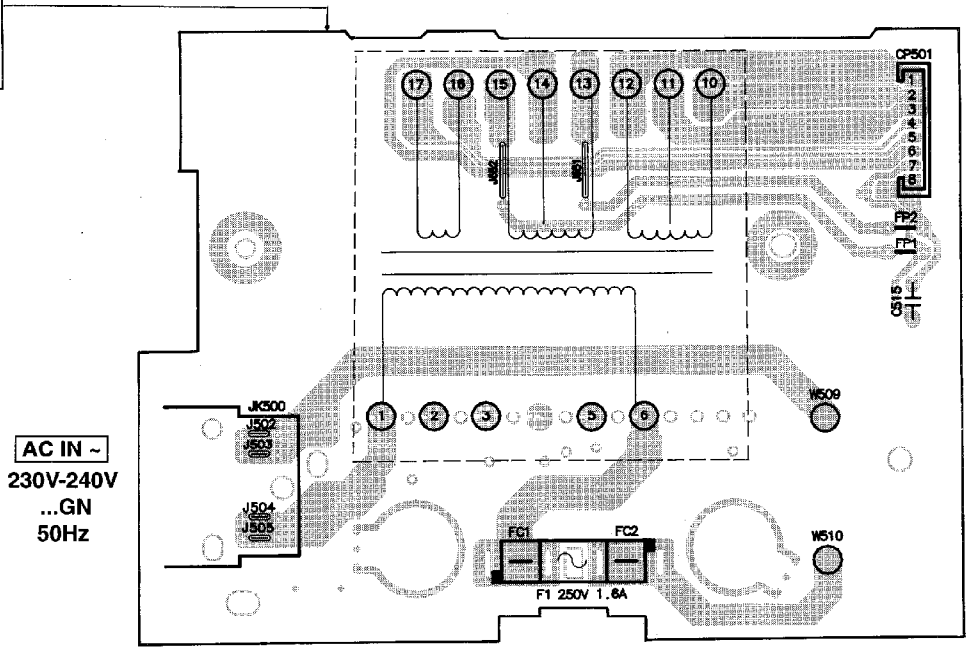


L TRANSFORMER P.C.B. (REP2197L)...GCS

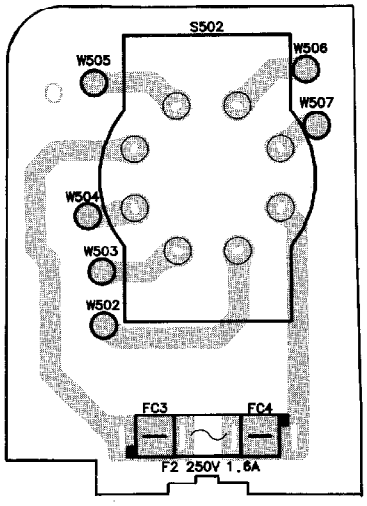


L TRANSFORMER P.C.B. (REP2197M)...GN

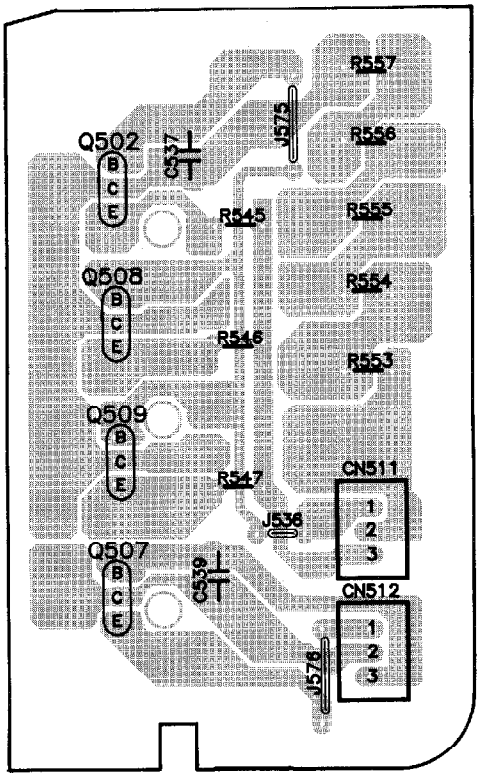
CAUTION
RISK OF ELECTRIC SHOCK
AC voltage line. Please do not touch this pcb.



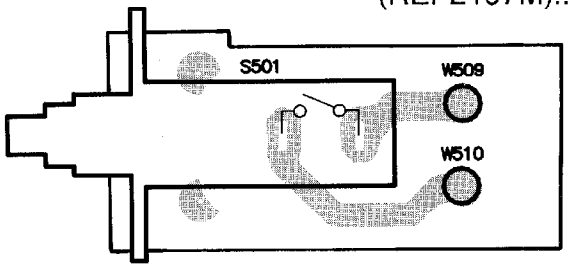
P VOLTAGE SELECTOR P.C.B. (REP2197J)...GC,GT



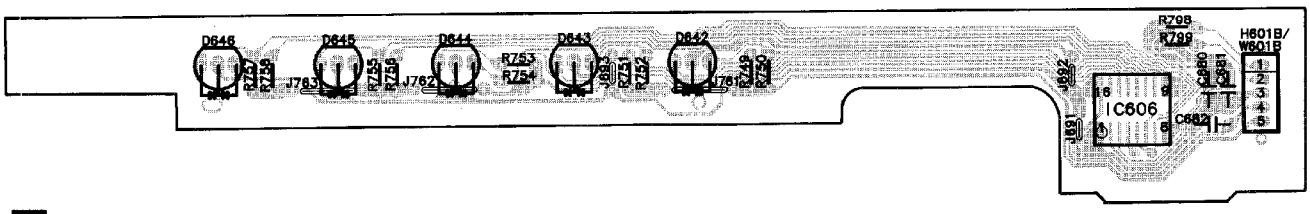
Q REGULATOR TRANSISTOR P.C.B. (REP2197J)...GC,GT (REP2197L)...GCS (REP2197M)...GN



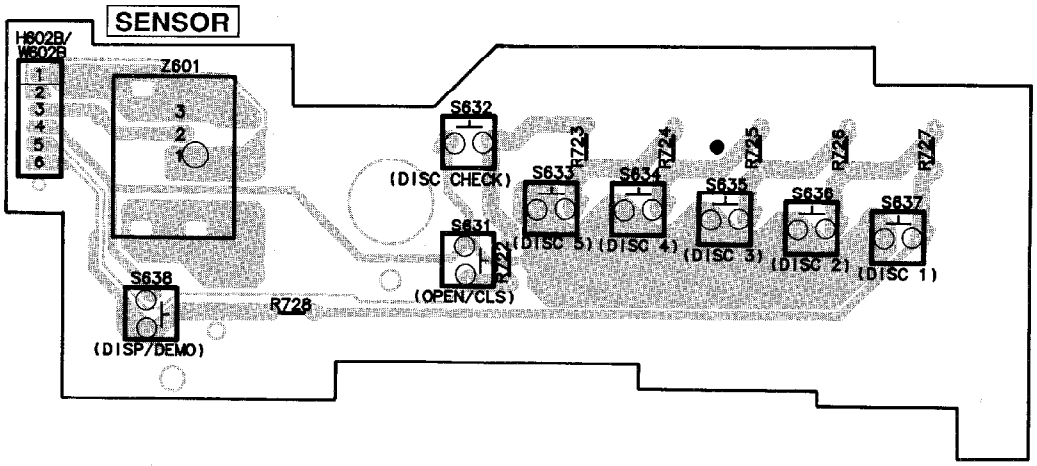
U POWER SWITCH P.C.B (REP2197J)...GC,GT (REP2197L)...GCS (REP2197M)...GN



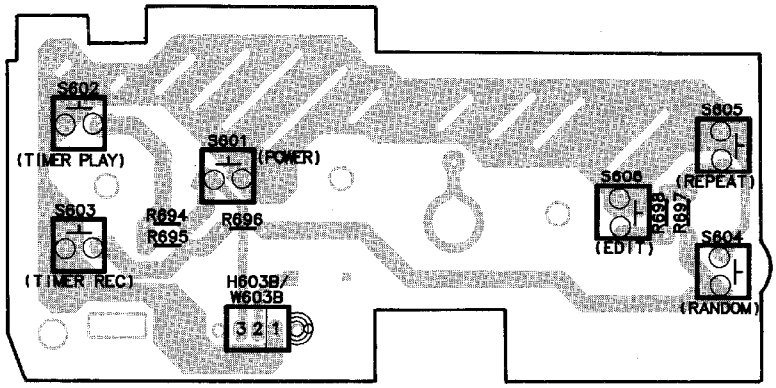
F LED P.C.B. (REP2199H)...GC,GT,GCS / (REP2199J)...GN



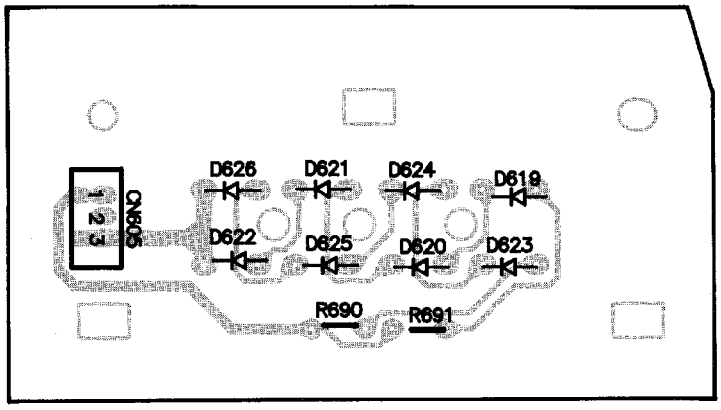
H SENSOR P.C.B. (REP2199H)...GC,GT,GCS / (REP2199J)...GN



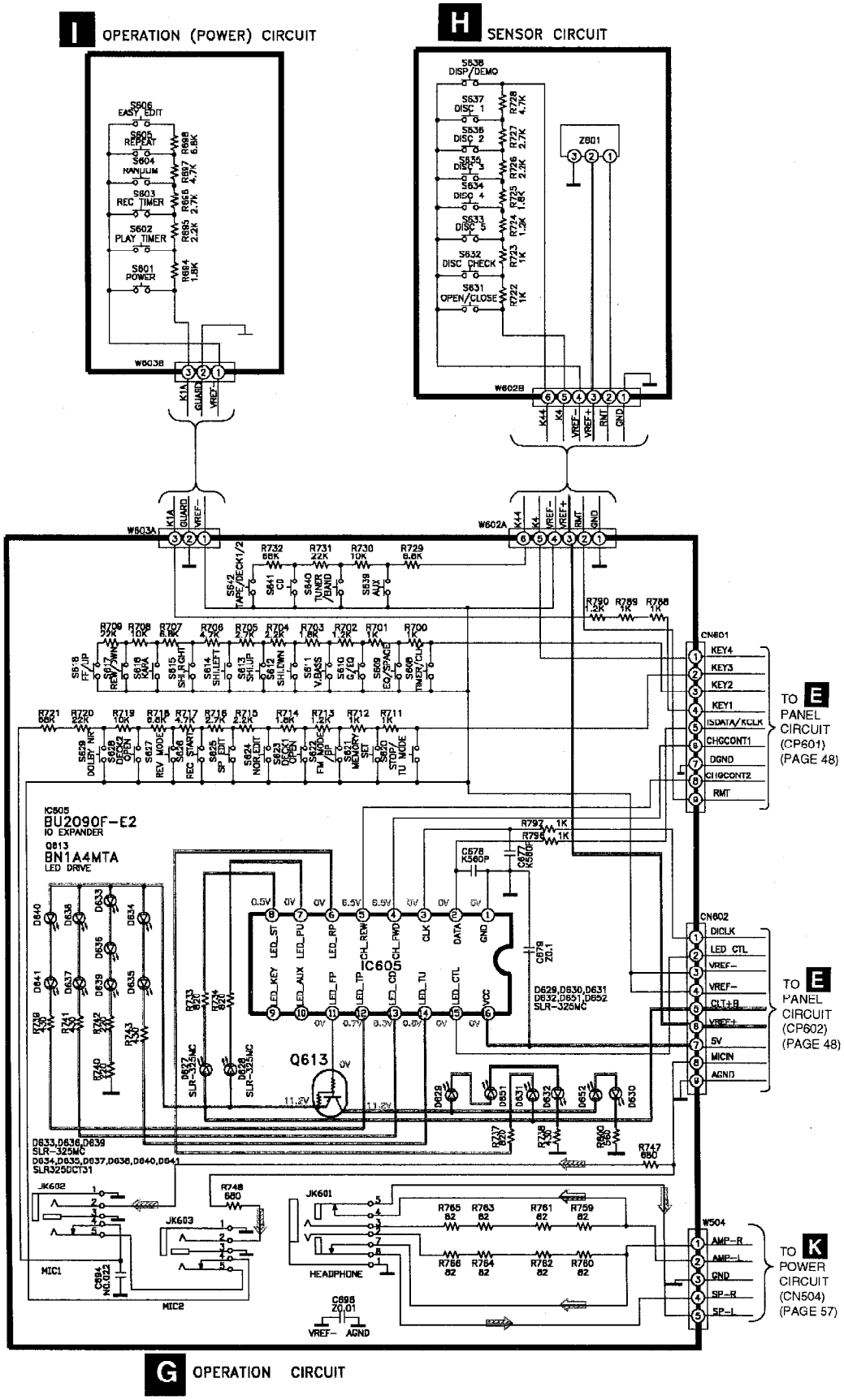
I OPERATION(POWER) P.C.B. (REP2199H)...GC,GT,GCS / (REP2199J)...GN



J BACK LIGHT P.C.B. (REP2196G)



■ Schematic Diagram



(All schematic diagrams may be modified at any time with the development of new technology)

Note :

< for Servo Circuit > (Page 43)

- **S701** : Reset switch

< for Voltage Selector Circuit and Power Switch Circuit > (Page 57,58)

- **S501** : Power switch
- **S502** : Voltage selector switch

< for Panel circuit, Sensor Circuit, Operation Circuit and Operation(Power) circuit > (Page 40, 48 – 50)

- **S601** : Power switch
- **S602** : Timer Play switch
- **S603** : Timer Record switch
- **S604** : Random switch
- **S605** : Repeat switch
- **S606** : Easy Edit switch
- **S608** : Clock/Timer switch
- **S609** : EQ. Space switch
- **S610** : Graphic EQ. switch
- **S611** : V. Bass switch
- **S612** : EQ. Space Down switch
- **S613** : EQ. Space Up switch
- **S614** : EQ. Space Left switch
- **S615** : EQ. Space Right switch
- **S616** : Karaoke switch
- **S617** : REW/Down switch
- **S618** : FF/Up switch
- **S620** : Stop/tuning mode switch
- **S621** : Reverse Play/memory/set switch
- **S622** : Forward Play/FM mode BP switch
- **S623** : Deck 1 Eject switch
- **S624** : Tape Edit Normal switch
- **S625** : Tape Edit High switch
- **S626** : Record switch
- **S627** : Reverse Mode switch
- **S628** : Eject Deck 2 switch
- **S629** : DOLBY NR switch
- **S631** : CD Open/Close switch
- **S632** : CD Disc Check switch
- **S633** : CD Disc 5 switch
- **S634** : CD Disc 4 switch
- **S635** : CD Disc 3 switch
- **S636** : CD Disc 2 switch
- **S637** : CD Disc 1 switch
- **S638** : Display/Demo switch
- **S639** : AUX switch
- **S640** : Tuner switch
- **S641** : CD switch
- **S642** : Deck 1/2 switch
- **VR601** : Mic control
- **VR602** : Mic control
- **VR603** : Volume control

< for Deck circuit, Mechanism (Deck 1) circuit and Mechanism (Deck 2) circuit > (Page 54 – 56)

- **S951** : Deck 1 Mode detect switch.
- **S952** : Deck 1 Tape detect switch.
- **S953** : Deck 1 CrO_2 detect switch.
- **S971** : Deck 2 Mode detect switch.
- **S972** : Deck 2 Tape detect switch.
- **S973** : Deck 2 CrO_2 detect switch.
- **S974** : Deck 2 Record detect switch.
- **S975** : Deck 2 Record detect switch.
- **VR101** : Deck 1 Lch playback gain adjustment VR (DOLBY).
- **VR102** : Deck 1 Rch playback gain adjustment VR (DOLBY).
- **VR103** : Deck 2 Lch playback gain adjustment VR (DOLBY).
- **VR104** : Deck 2 Rch playback gain adjustment VR (DOLBY).
- **VR201** : Deck 2 Normal speed adjustment.

< for Loading Motor circuit, Detecting Switch (1) Circuit and Detecting Switch (2) Circuit > (Page 58)

- **S1, S4** : Leaf switch.
- **S2, S3, S5** : Mecha switch.

•Signal line

: +B line
: –B line
: FM/AM signal line
: Main signal line
: Playback signal line
: Record signal line
: CD signal line
: FM signal line
: AM signal line
: AM OSC signal line
: FM OSC signal line
: Aux signal line

•The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

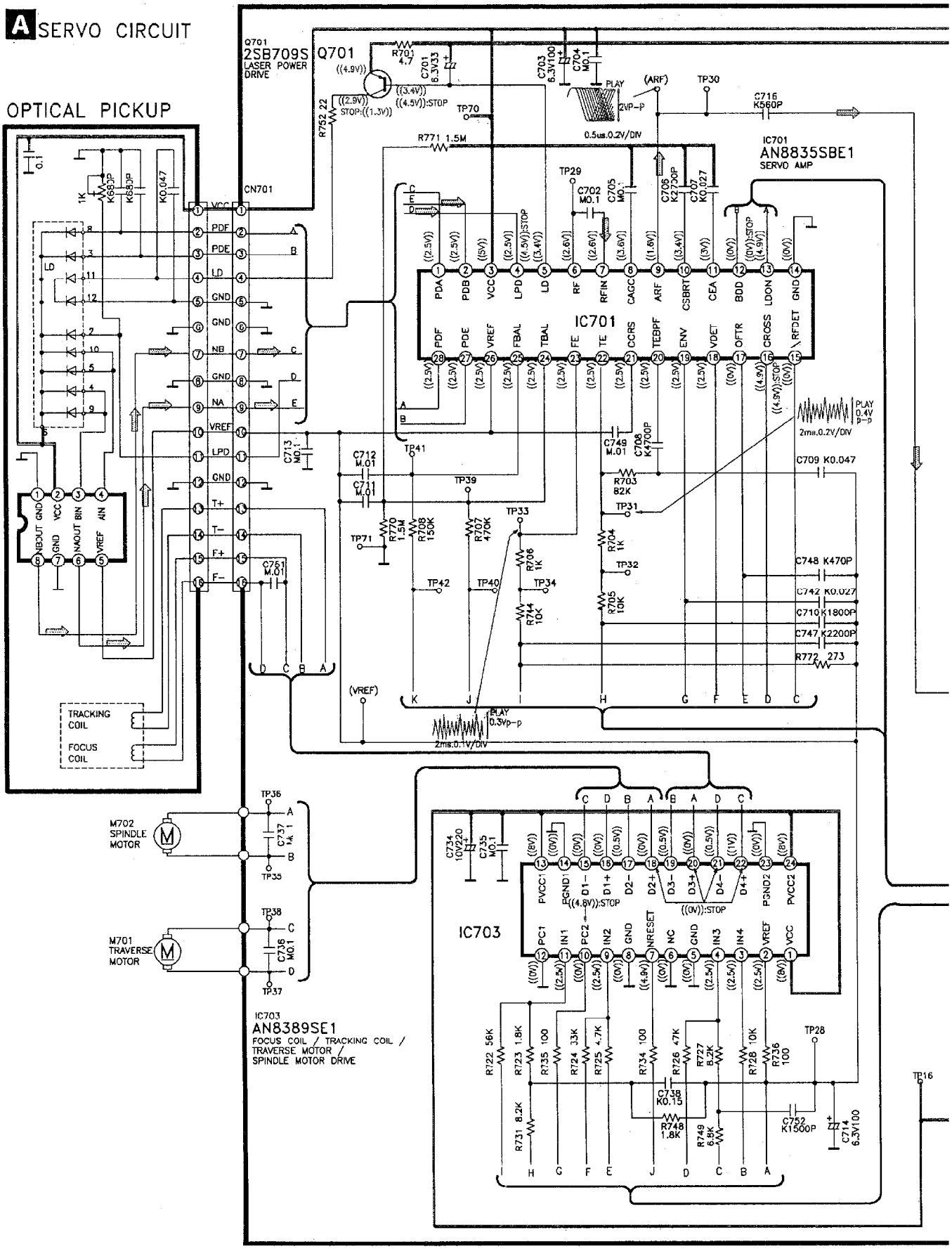
No mark : Playback << >>.....Rec [ ] : Tuner (( )) : CD ( ) ..... AM < > ..... FM

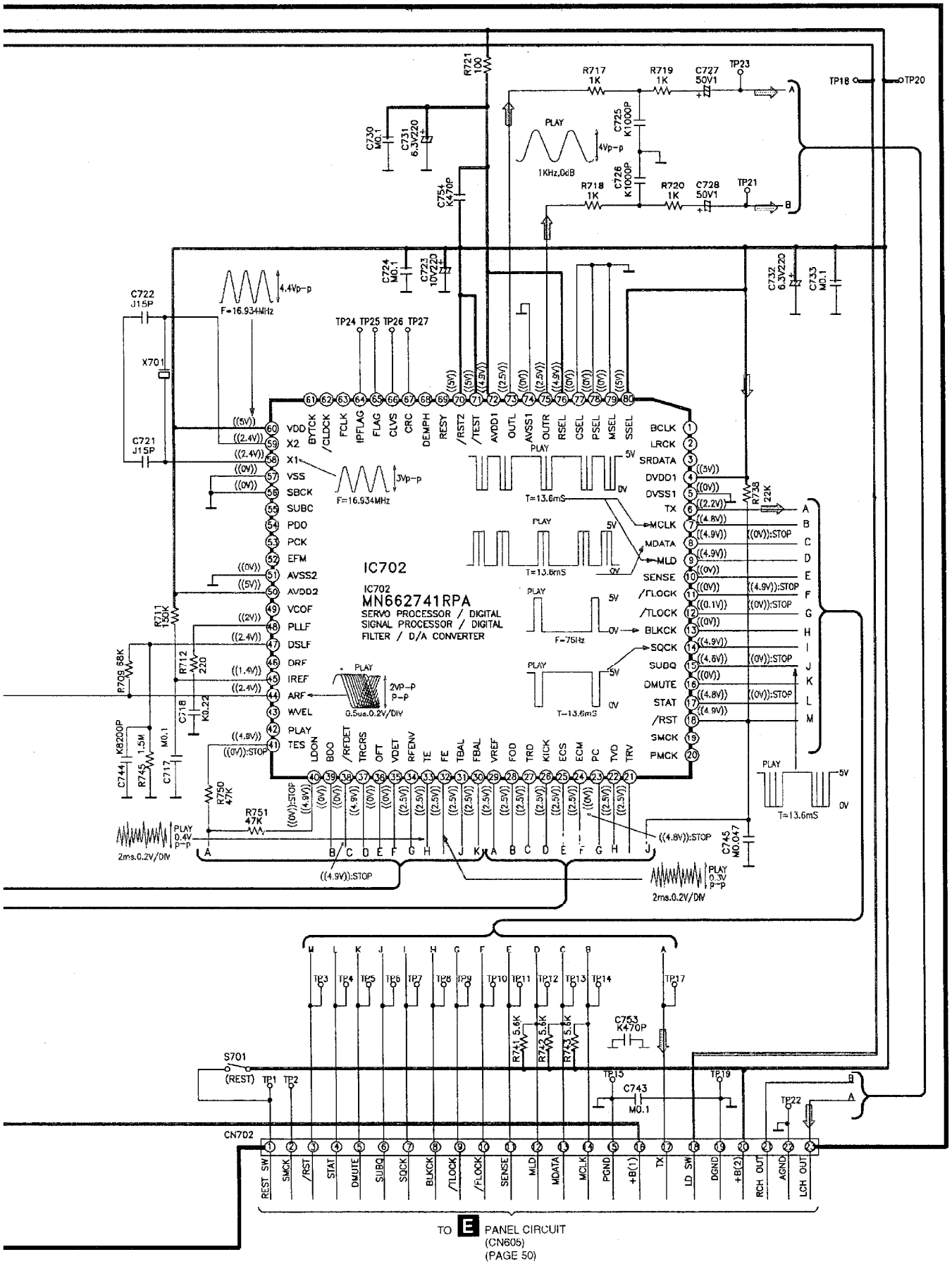
•Importance safety notice:

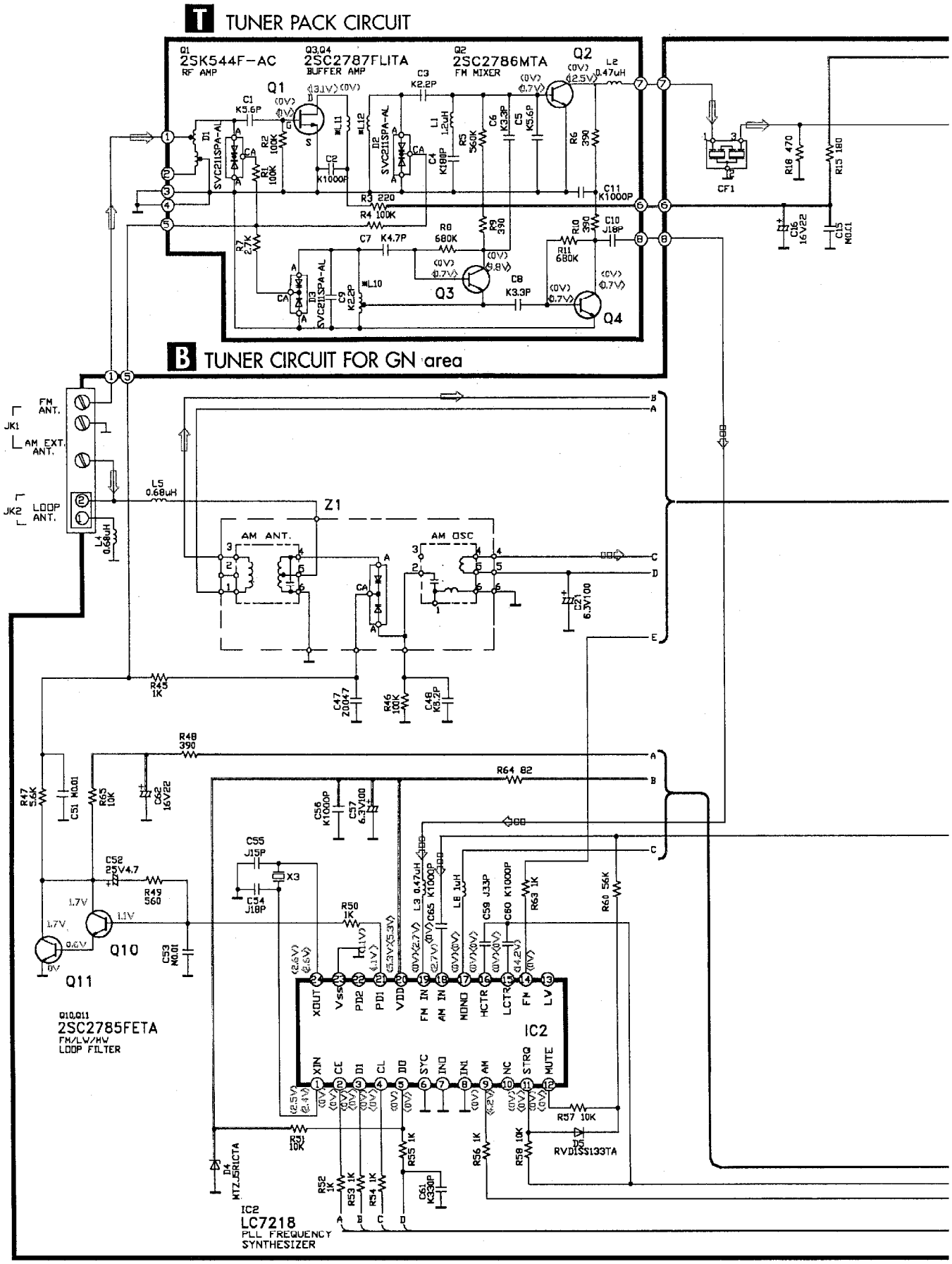
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

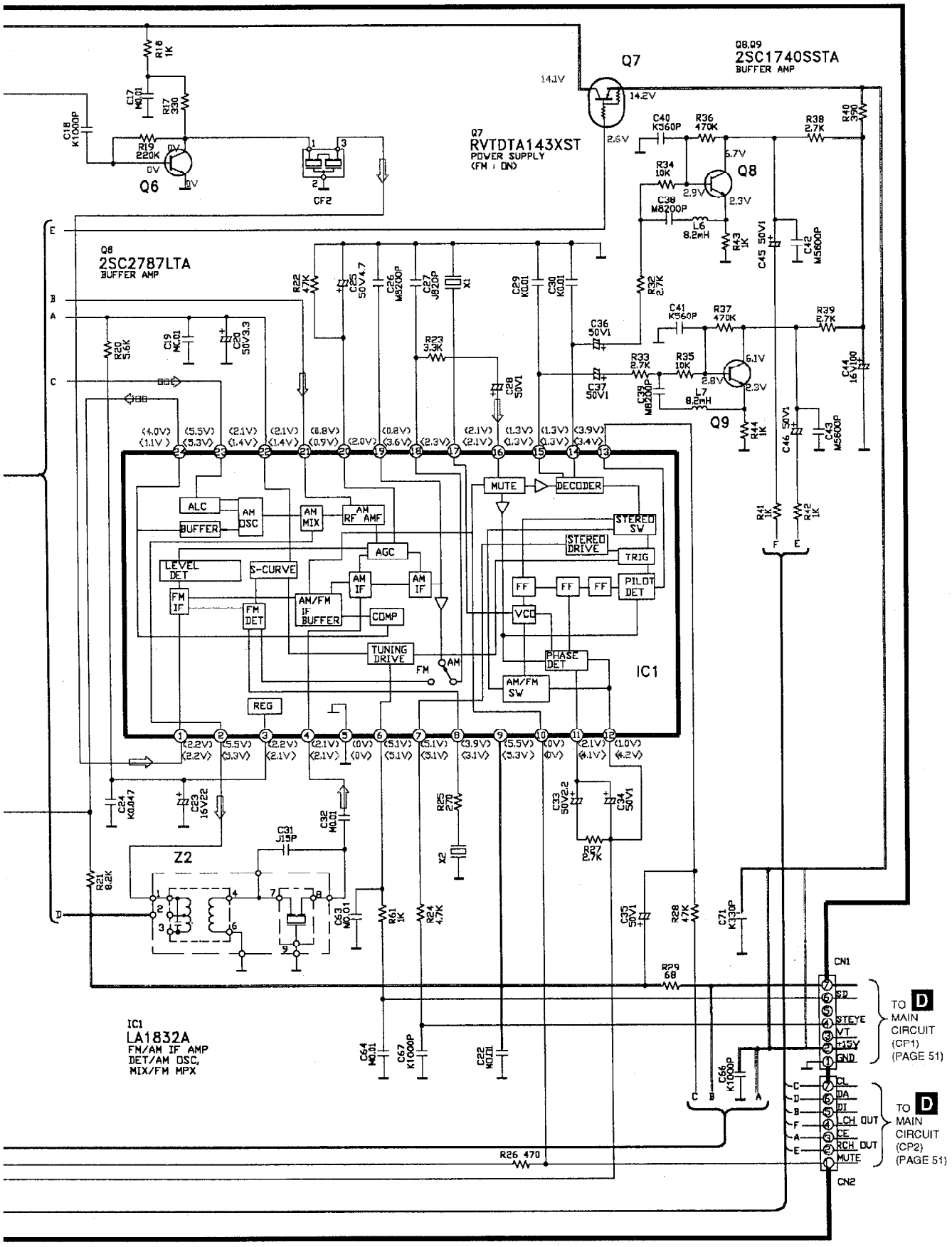
Caution !

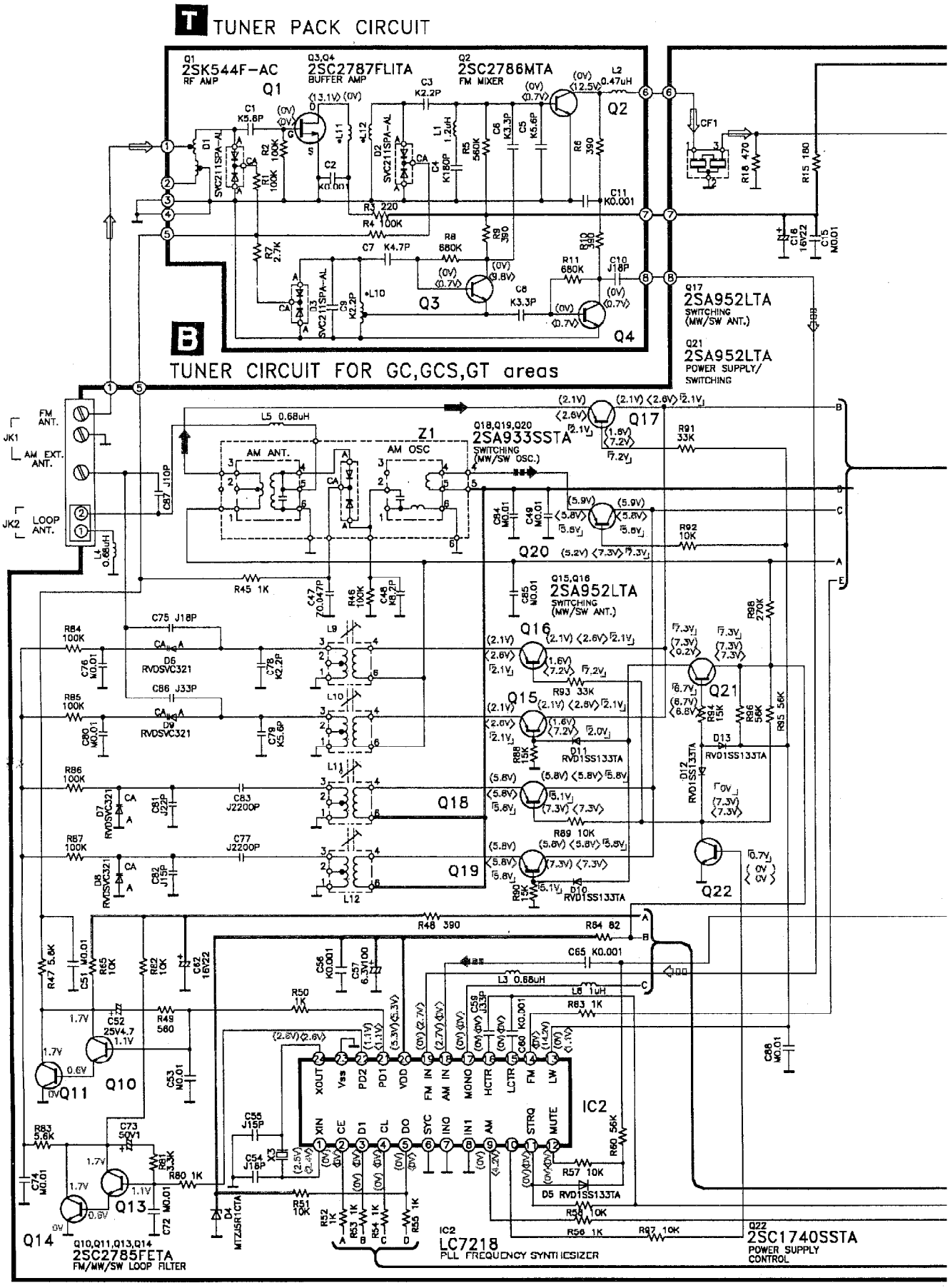
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
•Cover the parts boxes made of plastics with aluminium foil.
•Put a conductive mat on the work table.
•Ground the soldering iron.
•Do not touch the pins of IC, LSI or VLSI with fingers directly.

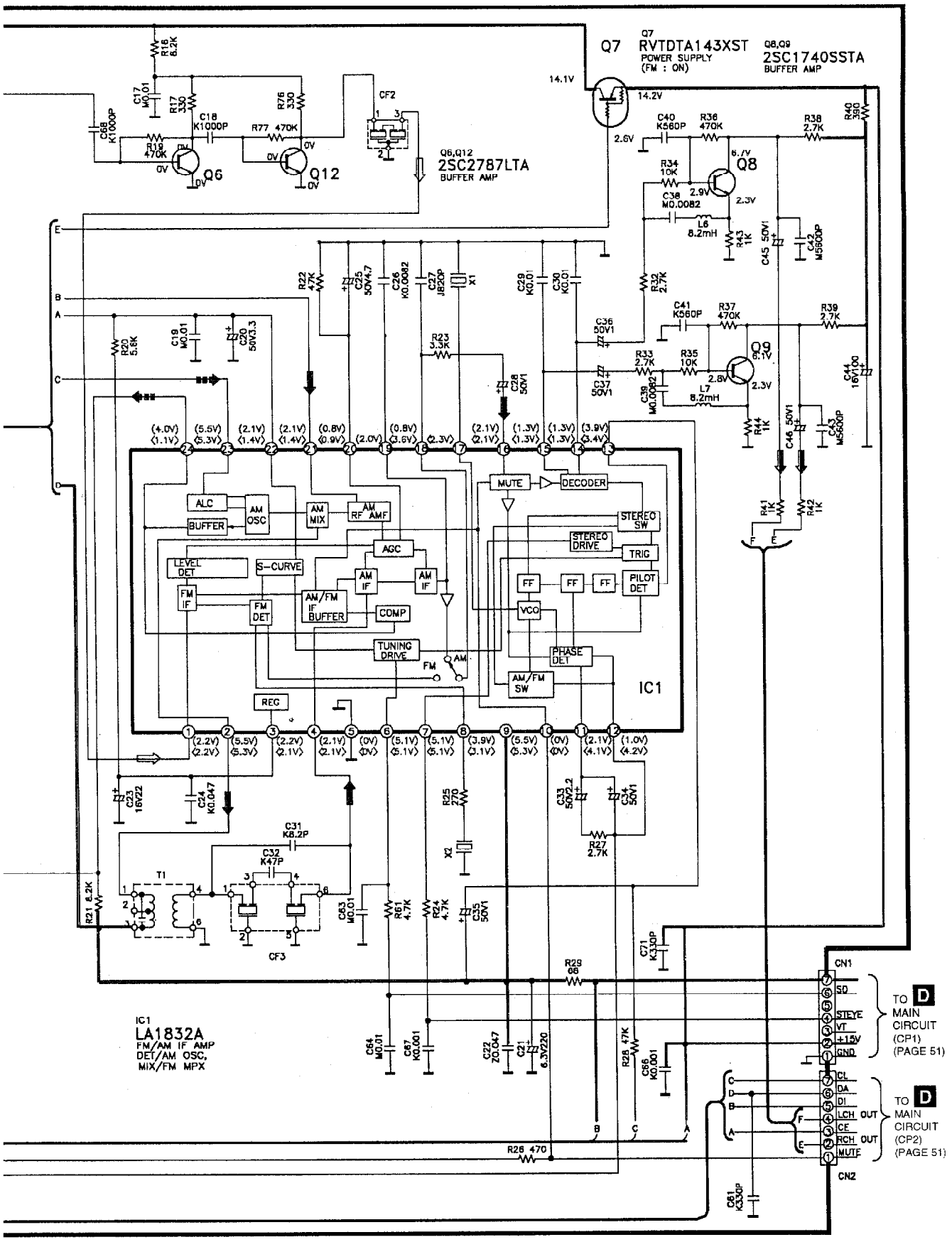

A SERVO CIRCUIT
OPTICAL PICKUP
Q701
2SB709S
LASER POWER DRIVE
IC701
AN8835SBE1
SERVO AMP
IC703
AN8389SE1
FOCUS COIL / TRACKING COIL / TRAVERSE MOTOR / SPINDLE MOTOR DRIVE
CN701
TRACKING COIL
FOCUS COIL
M702 SPINDLE MOTOR
M701 TRAVERSE MOTOR
PLAY 2VP-P
0.5us.0.2V/DIV
PLAY 0.4V p-p
2ms.0.2V/DIV
PLAY 0.3Vp-p
2ms.0.1V/DIV
(VREF)
TP28
TP29
TP30
TP31
TP32
TP33
TP34
TP35
TP36
TP37
TP38
TP39
TP40
TP41
TP42
TP70
TP71
TP16


IC702
IC702
MN662741RPA
SERVO PROCESSOR / DIGITAL
SIGNAL PROCESSOR / DIGITAL
FILTER / D/A CONVERTER
X701
F=16.934MHz
S701
(REST)
CN702
REST SW
SMCK
/RST
STAT
DMUTE
SUBQ
SQCK
BLKCK
/TLOCK
/FLOCK
SENSE
MLD
MDATA
MCLK
PGND
+B(1)
TX
LD SW
DGND
+B(2)
RCH OUT
AGND
LCH OUT
TO E PANEL CIRCUIT
(CN605)
(PAGE 50)

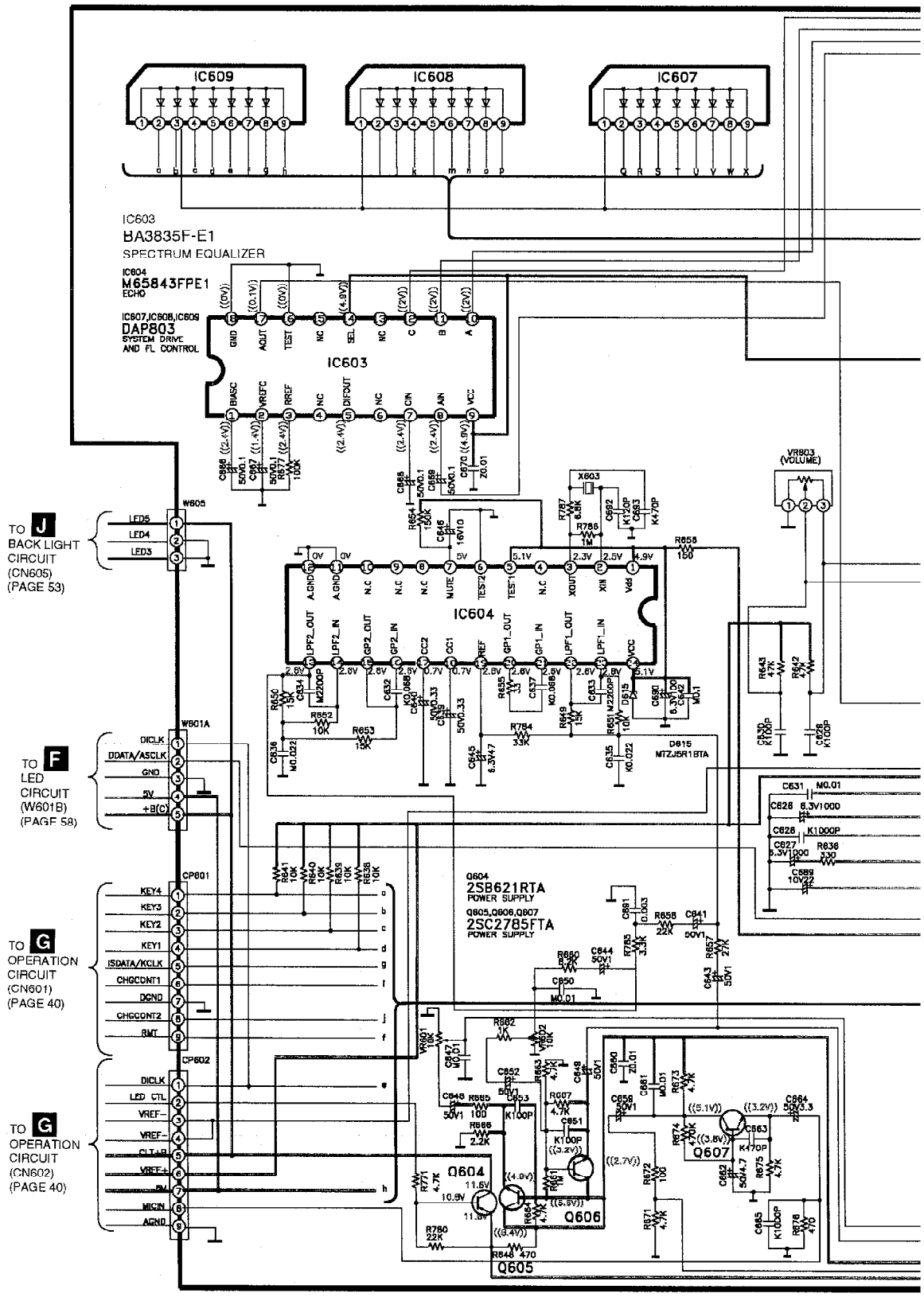

T TUNER PACK CIRCUIT
Q1
2SK544F-AC
RF AMP
Q3,Q4
2SC2787FLITA
BUFFER AMP
Q2
2SC2786MTA
FM MIXER
B TUNER CIRCUIT FOR GN area
FM ANT.
AM EXT. ANT.
LOOP ANT.
JK1
JK2
AM ANT.
AM OSC
Z1
Q10
Q11
2SC2785FETA
FM/LW/MW
LOOP FILTER
IC2
LC7218
PLL FREQUENCY
SYNTHESIZER
RVD1SS133TA

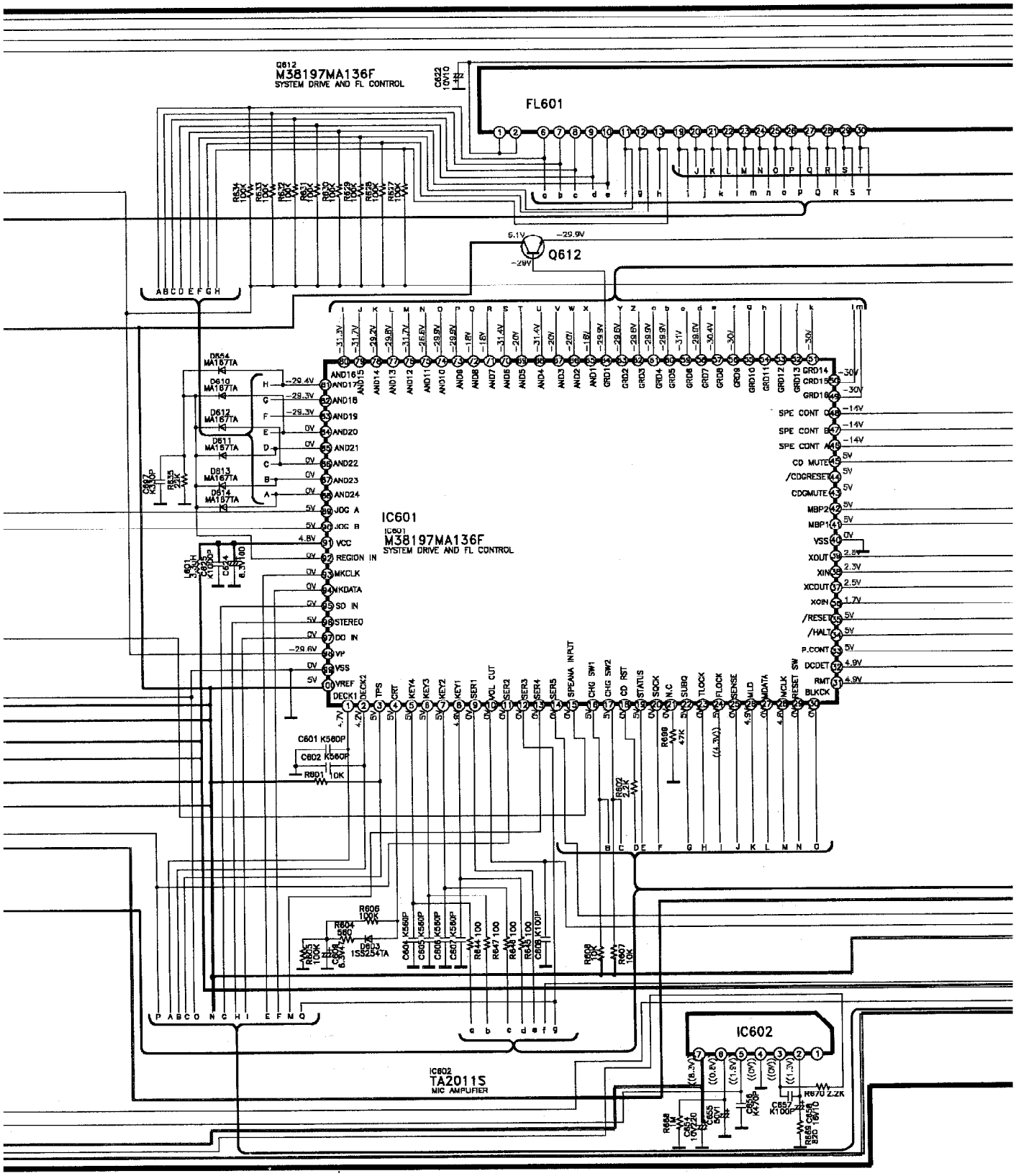

Q7
RVTDTA143XST
POWER SUPPLY
(FM : ON)
Q8,Q9
2SC1740SSTA
BUFFER AMP
Q6
Q8
2SC2787LTA
BUFFER AMP
Q8
Q9
CF2
Z2
IC1
LA1832A
FM/AM IF AMP
DET/AM OSC,
MIX/FM MPX
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
PILOT DET
VCO
PHASE DET
AM/FM SW
TUNING DRIVE
AGC
LEVEL DET
S-CURVE
ALC
BUFFER
AM OSC
AM MIX
AM RF AMP
AM IF
FM IF
FM DET
AM/FM IF BUFFER
COMP
REG
FF
CN1
CN2
TO D MAIN CIRCUIT (CP1) (PAGE 51)
TO D MAIN CIRCUIT (CP2) (PAGE 51)
STEYE
VT
+15V
GND
CL
DA
DI
LCH OUT
CE
RCH OUT
MUTE

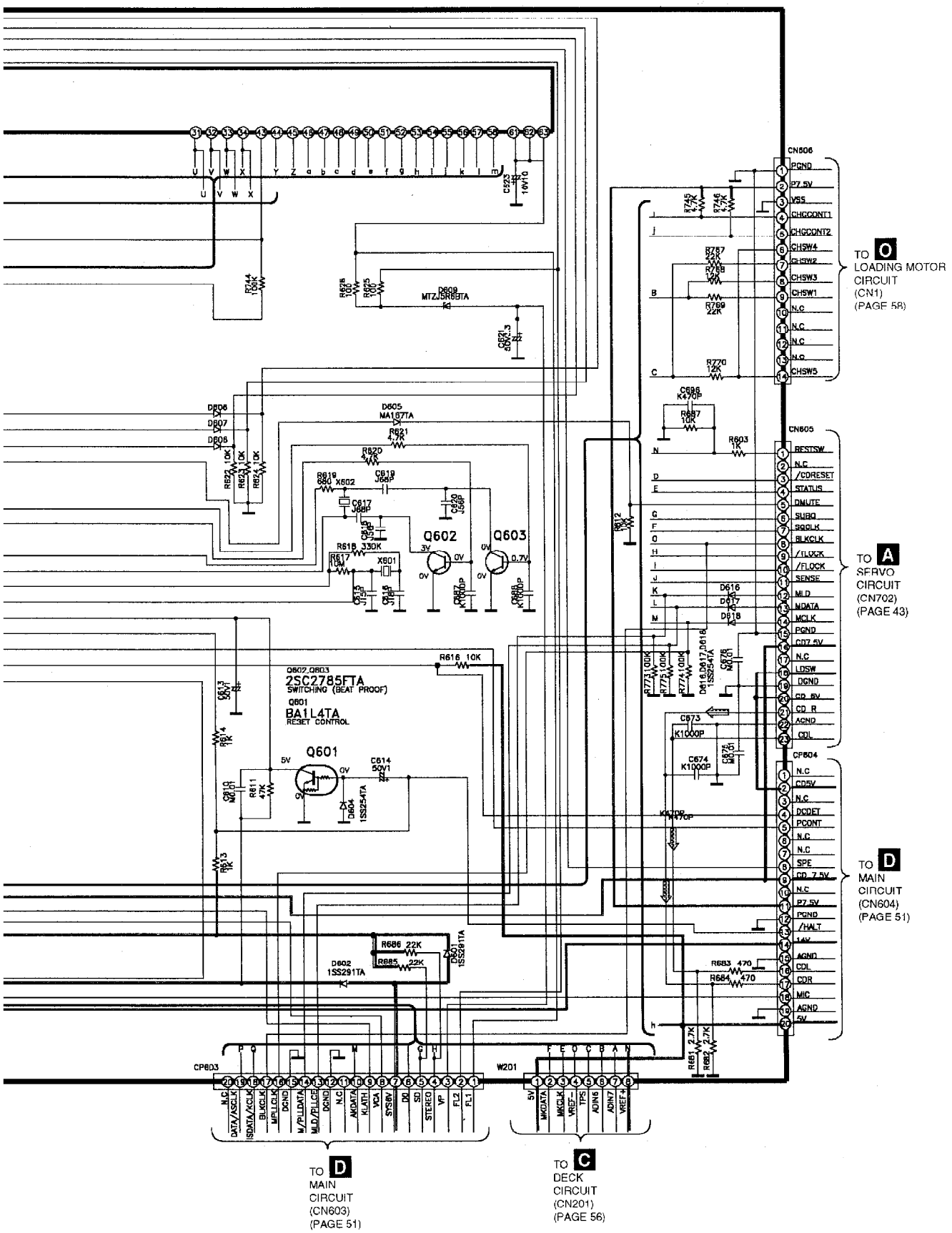

T TUNER PACK CIRCUIT
Q1 2SK544F-AC RF AMP
Q3,Q4 2SC2787FLITA BUFFER AMP
Q2 2SC2786MTA FM MIXER
Q2
Q3
Q4
B TUNER CIRCUIT FOR GC,GCS,GT areas
Q17 2SA952LTA SWITCHING (MW/SW ANT.)
Q21 2SA952LTA POWER SUPPLY/ SWITCHING
FM ANT.
JK1
AM EXT. ANT.
JK2 LOOP ANT.
AM ANT.
AM OSC
Z1
Q18,Q19,Q20 2SA933SSTA SWITCHING (MW/SW OSC.)
Q20
Q15,Q16 2SA952LTA SWITCHING (MW/SW ANT.)
Q16
Q15
Q18
Q19
Q21
Q22
D6 RVDSVC321
D9 RVDSVC321
D7 RVDSVC321
D8 RVDSVC321
D11 RVD1SS133TA
D12 RVD1SS133TA
D13 RVD1SS133TA
D10 RVD1SS133TA
D5 RVD1SS133TA
D4 MTZJ5R1CTA
Q10
Q11
Q13
Q14
Q10,Q11,Q13,Q14 2SC2785FETA FM/MW/SW LOOP FILTER
IC2 LC7218 PLL FREQUENCY SYNTHESIZER
Q22 2SC1740SSTA POWER SUPPLY CONTROL
XOUT Vss PD2 PD1 VDD FM IN AM IN MONO HCTR LCTR FM LW
XIN CE DI CL DO SYC INO IN1 AM STRQ MUTE


Q7
RVTDTA143XST
POWER SUPPLY
(FM : ON)
Q8,Q9
2SC1740SSTA
BUFFER AMP
Q6,Q12
2SC2787LTA
BUFFER AMP
IC1
LA1832A
FM/AM IF AMP
DET/AM OSC,
MIX/FM MPX
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
PILOT DET
VCO
PHASE DET
AM/FM SW
TUNING DRIVE
AGC
COMP
AM/FM IF BUFFER
FM DET
FM IF
AM IF
LEVEL DET
S-CURVE
ALC
BUFFER
AM OSC
AM MIX
AM RF AMF
REG
FF
CN1
SD
STEYE
VT
+15V
GND
CN2
CL
DA
DI
LCH OUT
CE
RCH OUT
MUTE
TO D MAIN CIRCUIT (CP1) (PAGE 51)
TO D MAIN CIRCUIT (CP2) (PAGE 51)

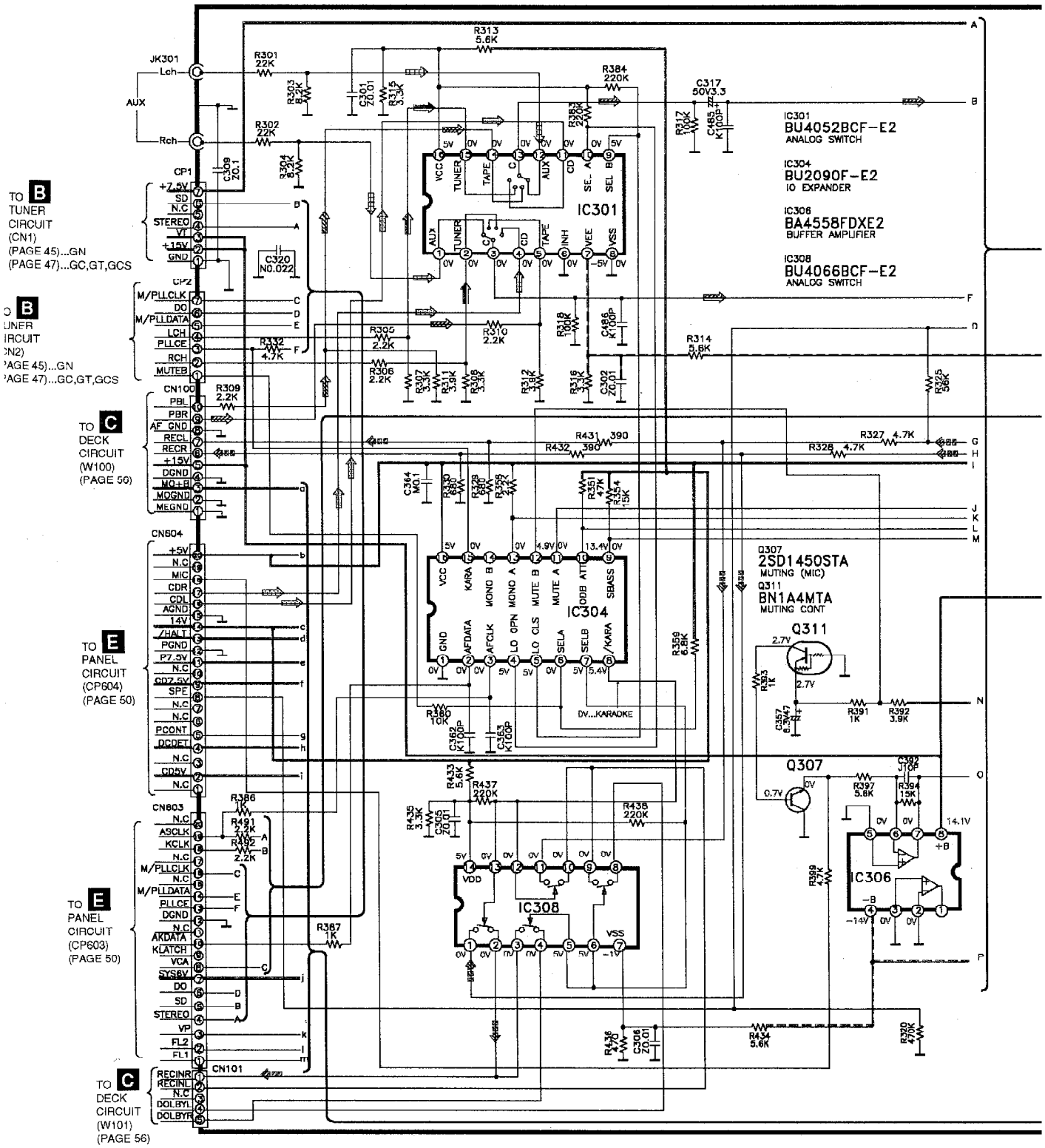
E PANEL CIRCUIT

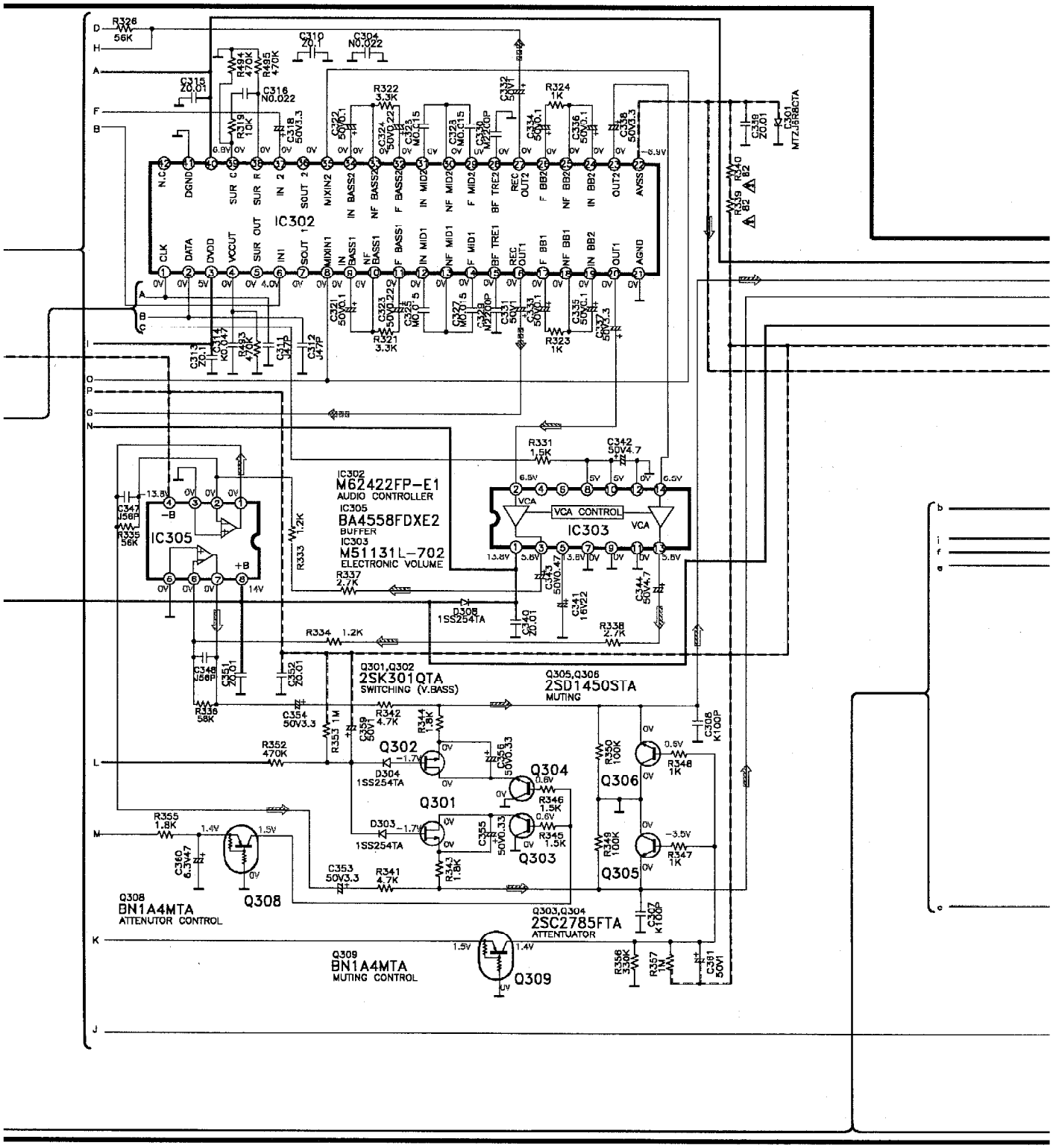



Q612
M38197MA136F
SYSTEM DRIVE AND FL CONTROL
FL601
Q612
IC601
M38197MA136F
SYSTEM DRIVE AND FL CONTROL
IC602
TA2011S
MIC AMPLIFIER

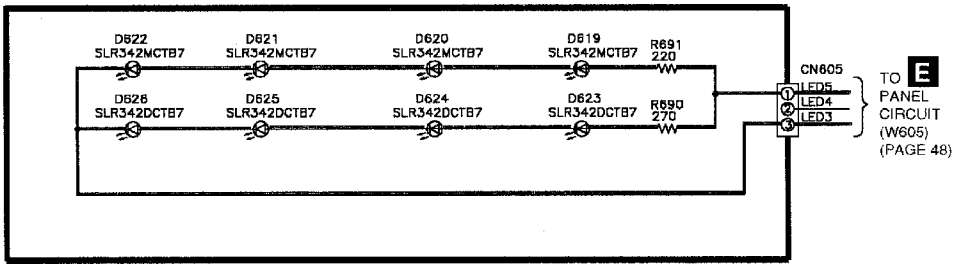

CN606
PGND
P7.5V
VSS
CHGCONT1
CHGCONT2
CHSW4
CHSW2
CHSW3
CHSW1
N.C
N.C
N.C
CHSW5
TO O
LOADING MOTOR
CIRCUIT
(CN1)
(PAGE 58)
CN605
RESTSW
N.C
/CDRESET
STATUS
DMUTE
SUBQ
SQCLK
BLKCLK
/FLOCK
/FLOCK
SENSE
MLD
MDATA
MCLK
PGND
CD7.5V
N.C
LDSW
DGND
CD 8V
CD R
AGND
CDL
TO A
SERVO
CIRCUIT
(CN702)
(PAGE 43)
CP604
N.C
CD5V
N.C
DCDET
PCONT
N.C
N.C
SPE
CD 7.5V
N.C
P7.5V
PGND
/HALT
14V
AGND
CDL
CDR
MIC
AGND
5V
TO D
MAIN
CIRCUIT
(CN604)
(PAGE 51)
Q602,Q603
2SC2785FTA
SWITCHING (BEAT PROOF)
Q601
BA1L4TA
RESET CONTROL
Q601
Q602
Q603
D605
MA167TA
D608
MTZJ5R6BTA
D602
1SS291TA
D601
1SS281TA
D604
1SS254TA
D616,D617,D618
1SS254TA
CP603
N.C
DATA/XSCLK
ISDATA/XCLK
BLKCLK
MPLLCLK
DGND
M/PLLDATA
MLD/PLLCE
DGND
N.C
AKDATA
KLATH
VCA
SYSW
DO
SO
STEREO
VP
FL2
FL1
TO D
MAIN
CIRCUIT
(CN603)
(PAGE 51)
W201
5V
MKDATA
MKCLK
VREF-
TPS
ADIN6
ADIN7
VREF+
TO C
DECK
CIRCUIT
(CN201)
(PAGE 56)

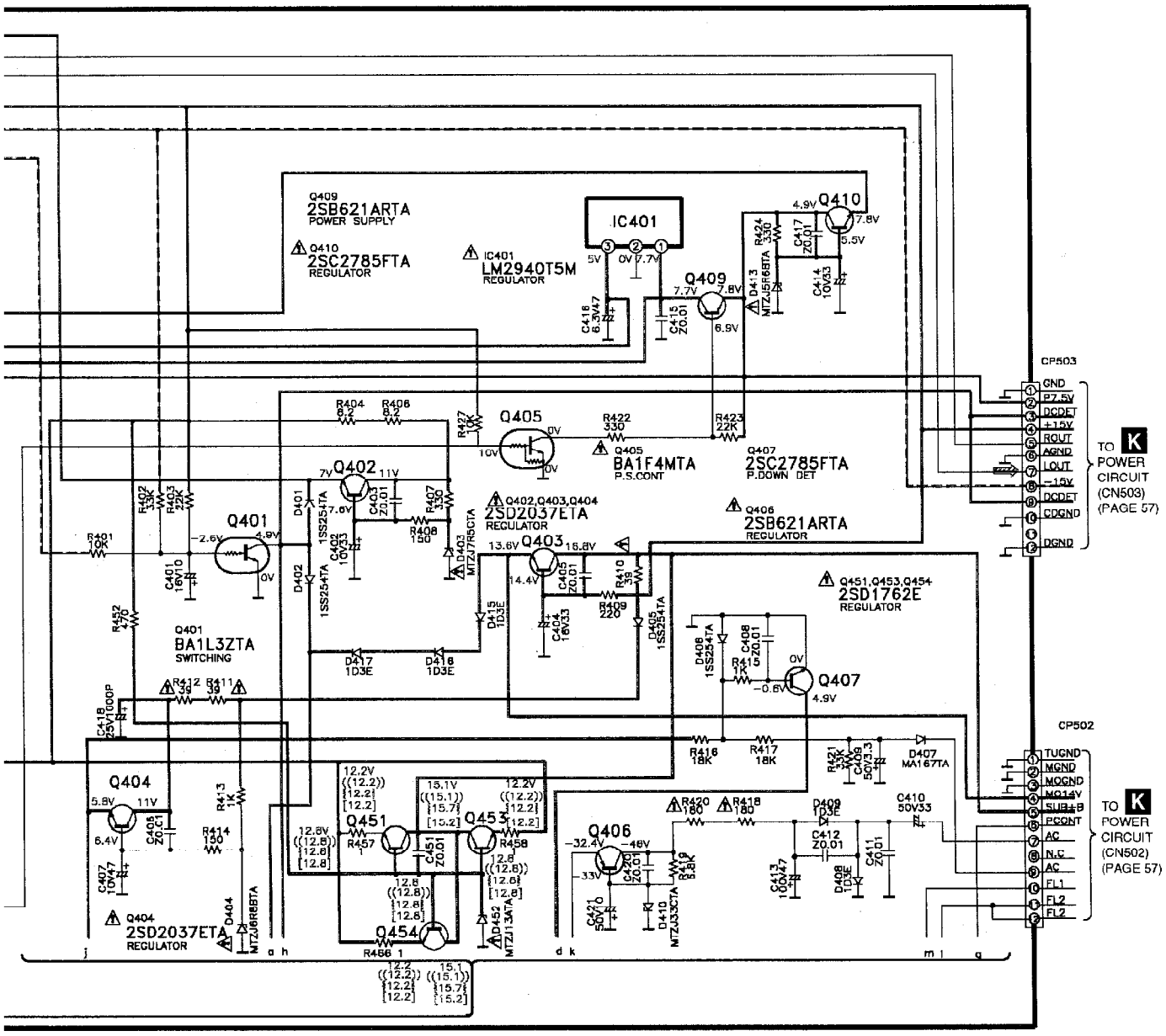
D MAIN CIRCUIT



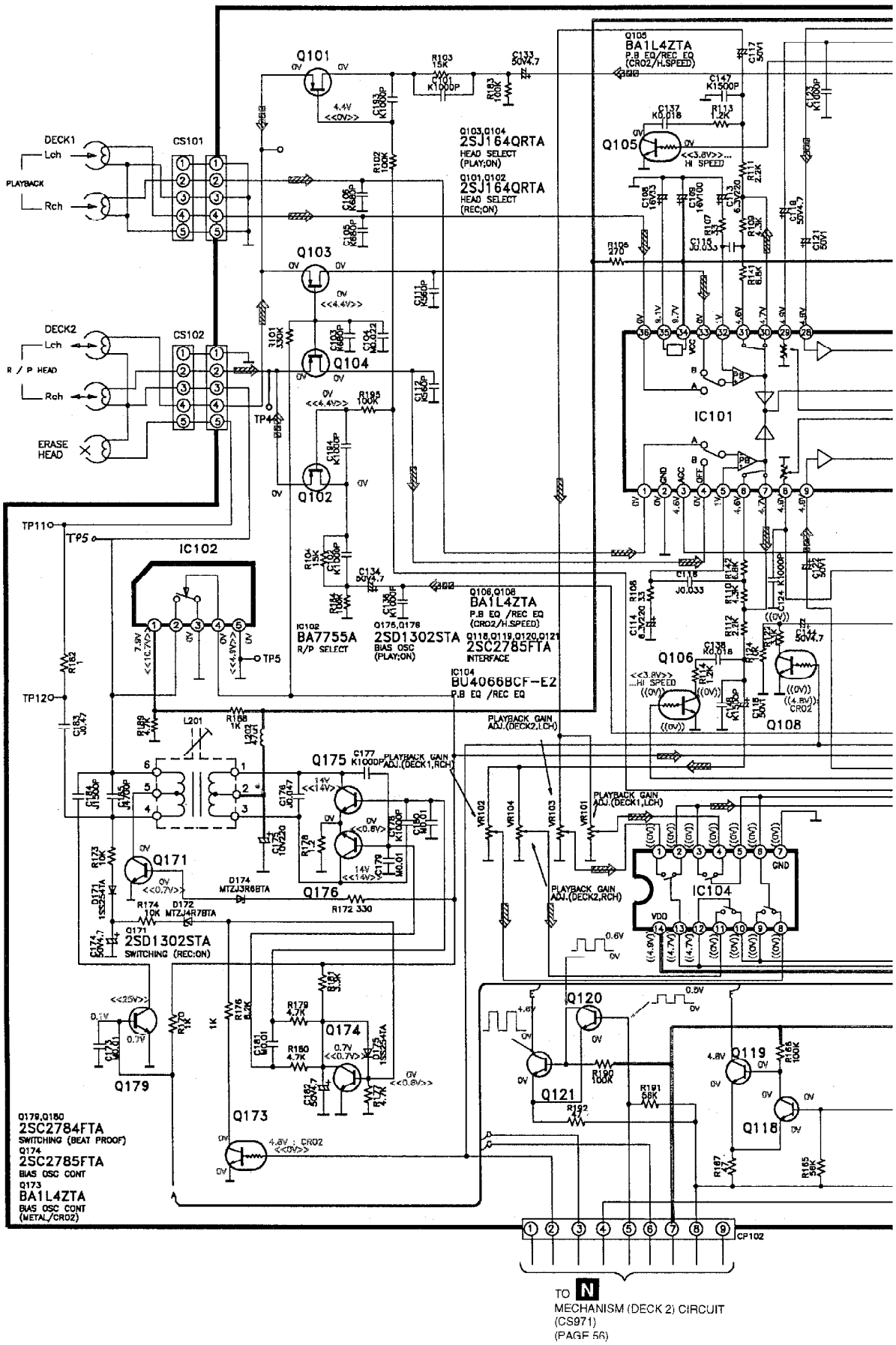

IC302
M62422FP-E1
AUDIO CONTROLLER
IC305
BA4558FDXE2
BUFFER
IC303
M51131L-702
ELECTRONIC VOLUME
VCA CONTROL
VCA
Q301,Q302
2SK301QTA
SWITCHING (V.BASS)
Q305,Q306
2SD1450STA
MUTING
Q308
BN1A4MTA
ATTENUTOR CONTROL
Q309
BN1A4MTA
MUTING CONTROL
Q303,Q304
2SC2785FTA
ATTENTUATOR
Q302
Q304
Q301
Q303
Q306
Q305
D304
1SS254TA
D303
1SS254TA
D308
1SS254TA

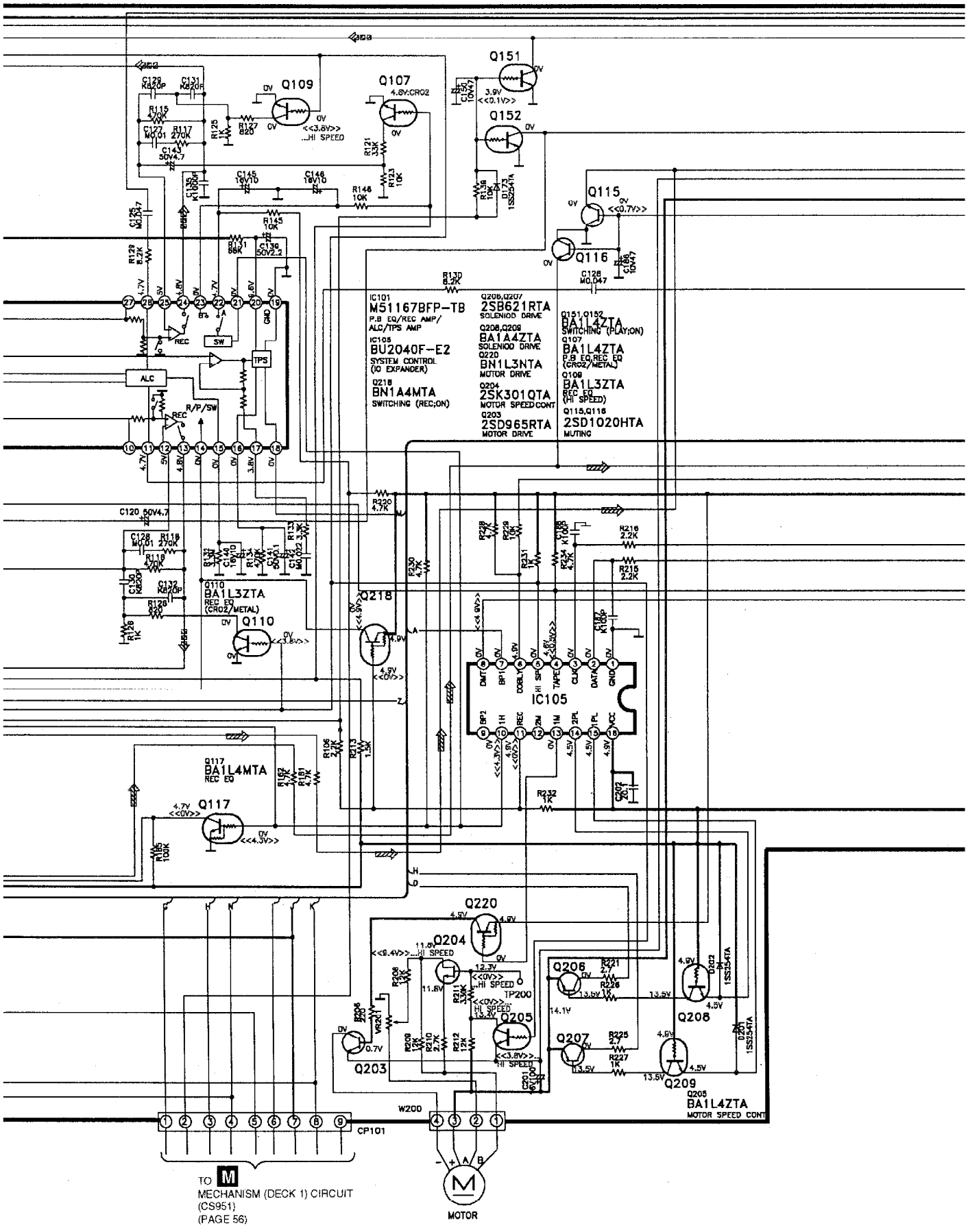
J BACK LIGHT CIRCUIT

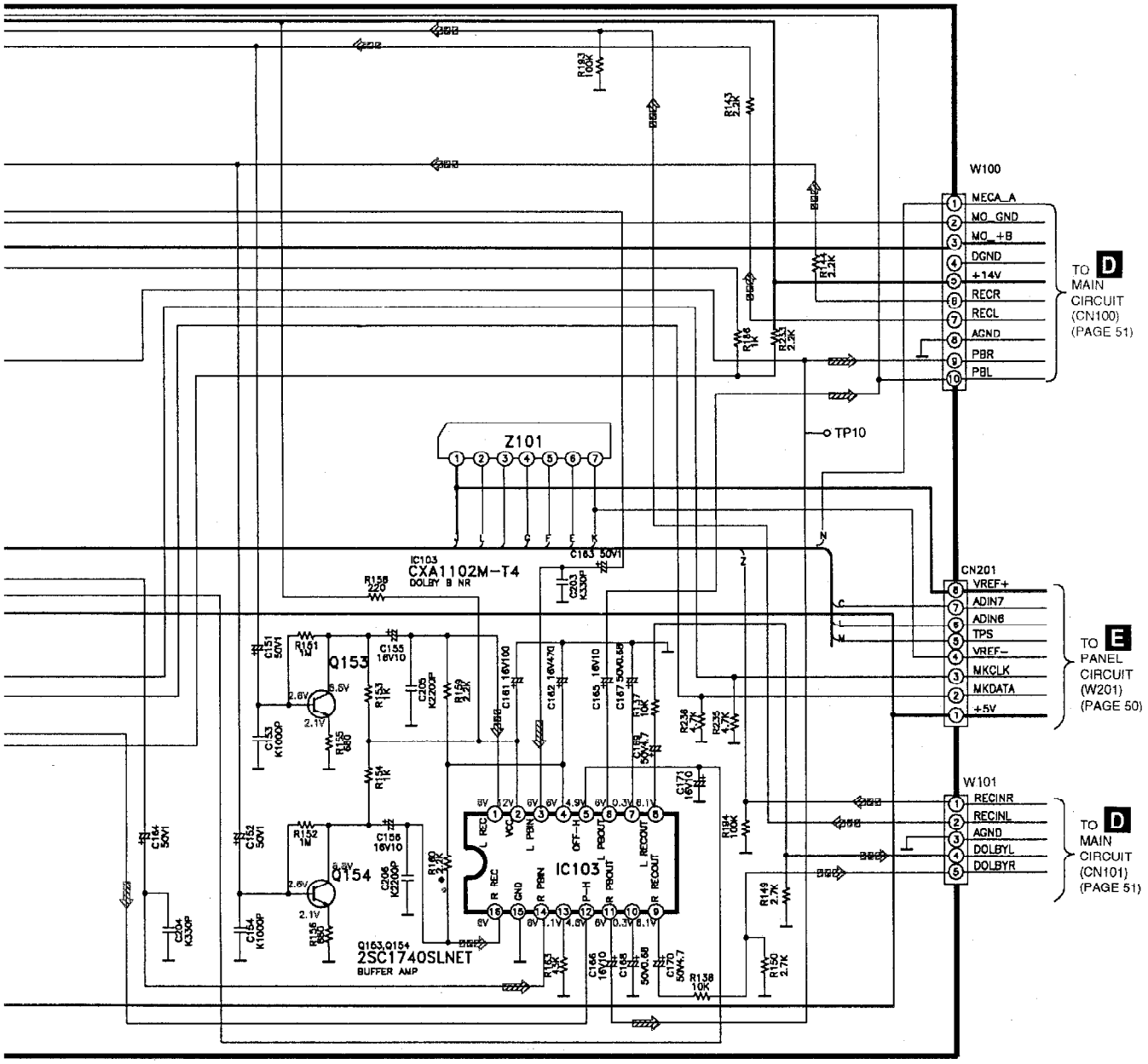




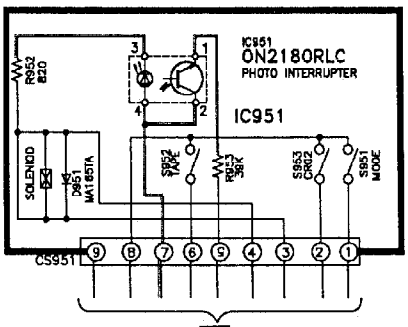
C DECK CIRCUIT



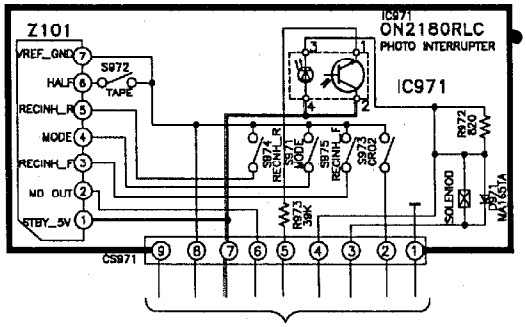

IC101
M51167BFP-TB
P.B EQ/REC AMP/
ALC/TPS AMP
IC105
BU2040F-E2
SYSTEM CONTROL
(IO EXPANDER)
Q218
BN1A4MTA
SWITCHING (REC;ON)
Q208,Q207
2SB621RTA
SOLENIOD DRIVE
Q208,Q209
BA1A4ZTA
SOLENIOD DRIVE
Q220
BN1L3NTA
MOTOR DRIVE
Q204
2SK301QTA
MOTOR SPEED CONT
Q203
2SD965RTA
MOTOR DRIVE
Q151,Q152
BA1L4ZTA
SWITCHING (PLAY;ON)
Q107
BA1L4ZTA
P.B EQ,REC EQ
(CRO2/METAL)
Q109
BA1L3ZTA
REC EQ
(HI SPEED)
Q115,Q116
2SD1020HTA
MUTING
Q110
BA1L3ZTA
REC EQ
(CRO2/METAL)
Q117
BA1L4MTA
REC EQ
Q205
BA1L4ZTA
MOTOR SPEED CONT
Q109
Q107
Q151
Q152
Q115
Q116
Q110
Q218
Q117
Q220
Q204
Q206
Q207
Q208
Q209
Q205
Q203
IC105
TP200
W200
CP101
REC
SW
TPS
ALC
R/P/SW
TO M
MECHANISM (DECK 1) CIRCUIT
(CS951)
(PAGE 56)
MOTOR

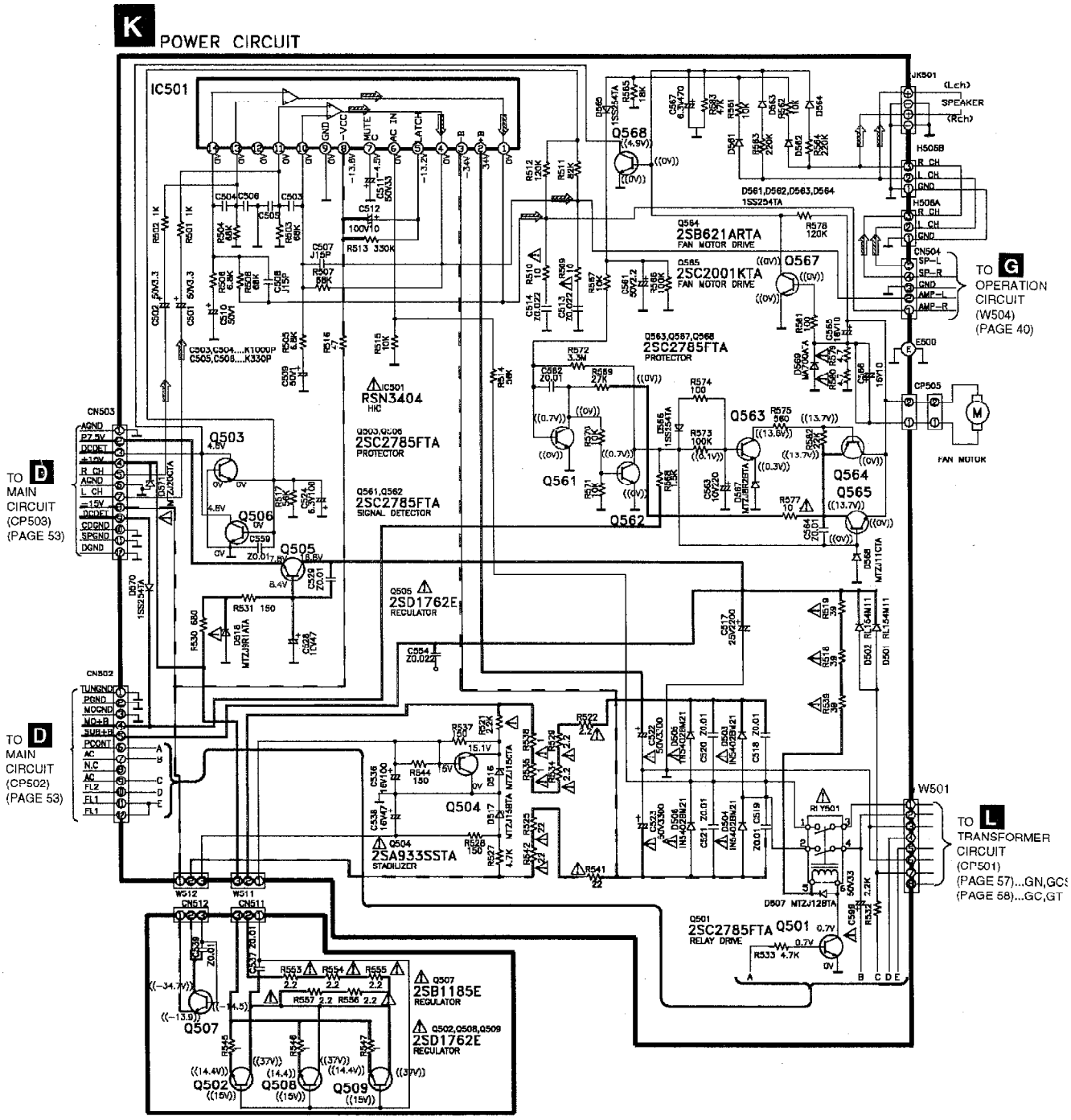


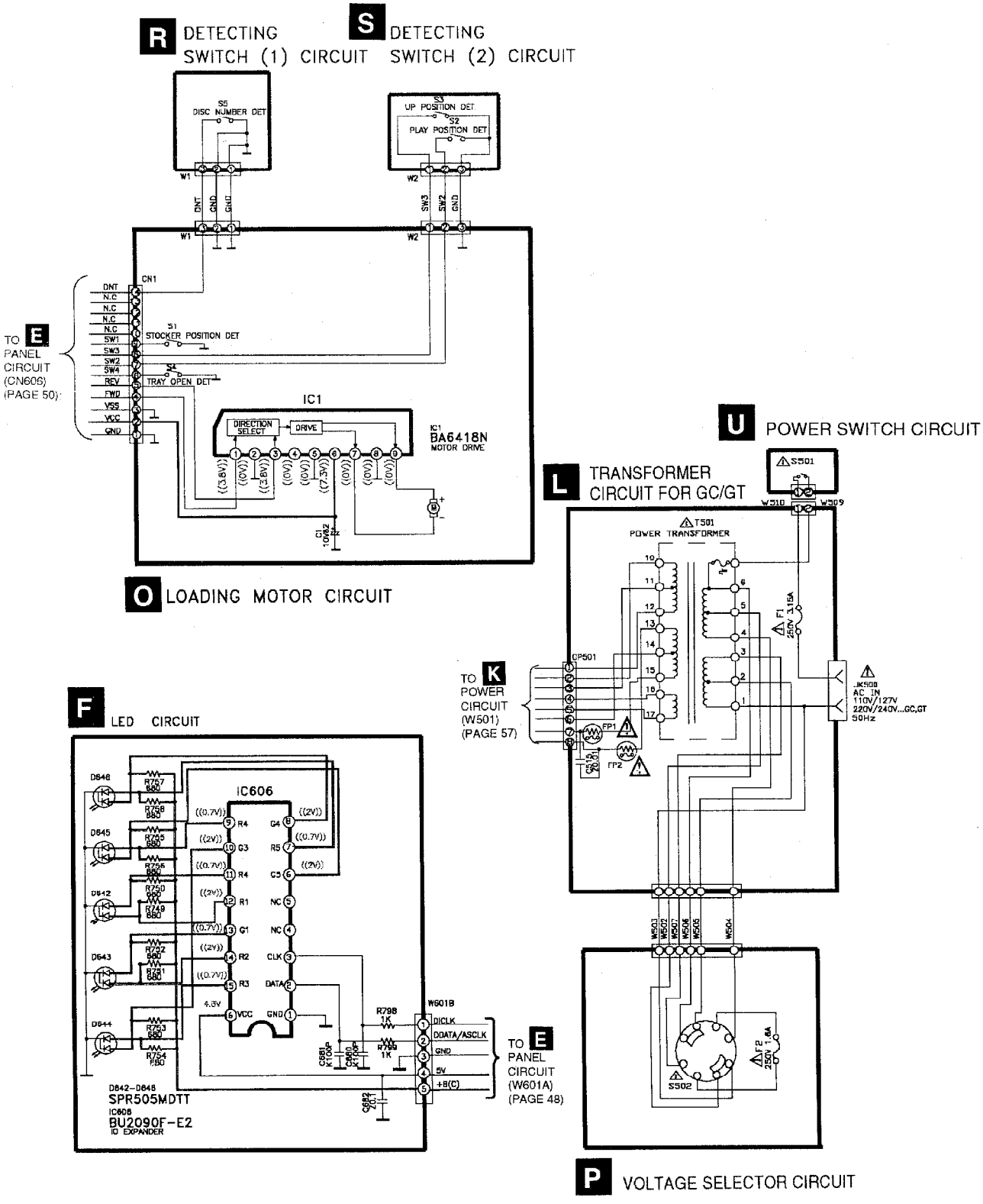
M MECHANISM (DECK 1) CIRCUIT



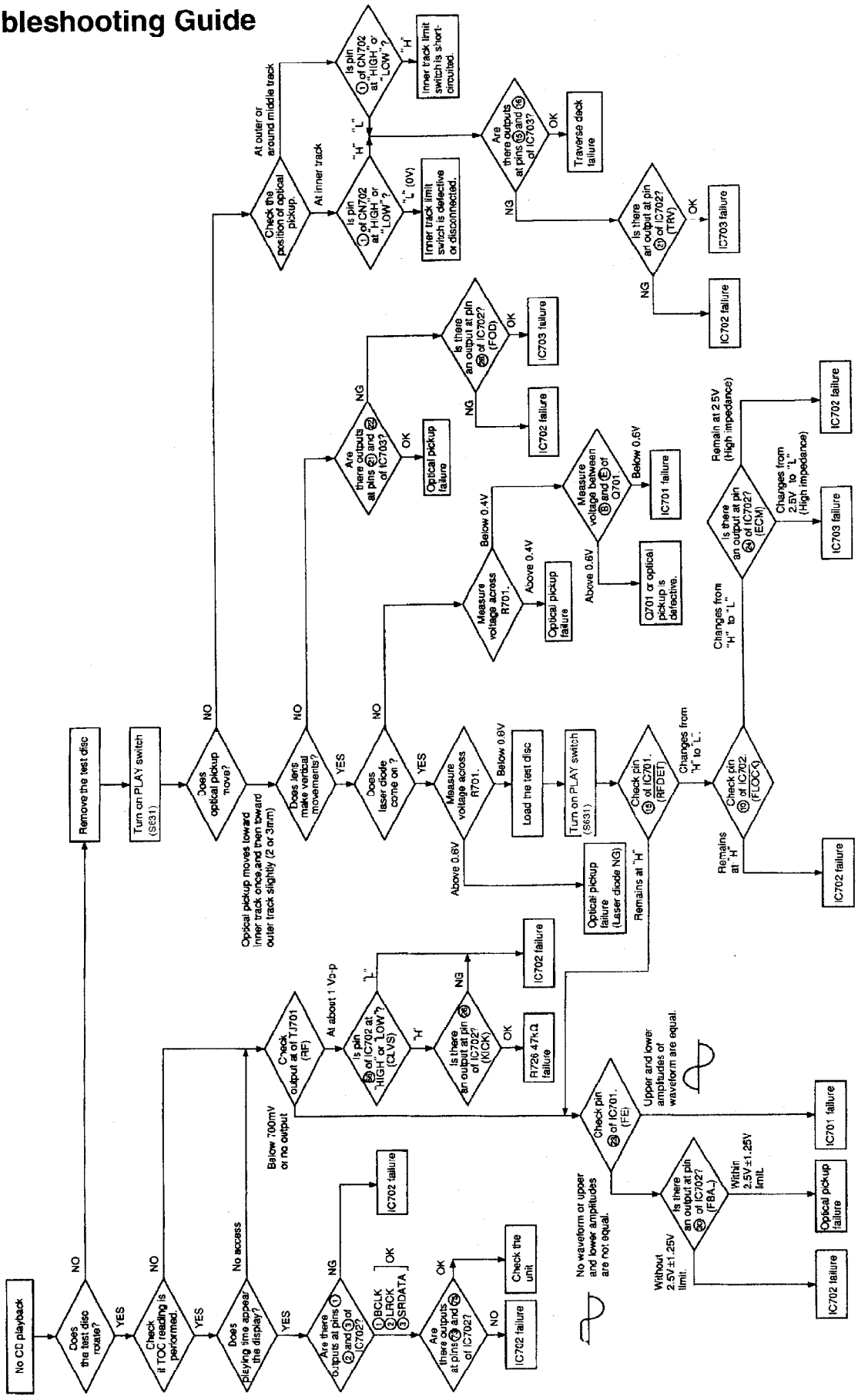
N MECHANISM (DECK 2) CIRCUIT



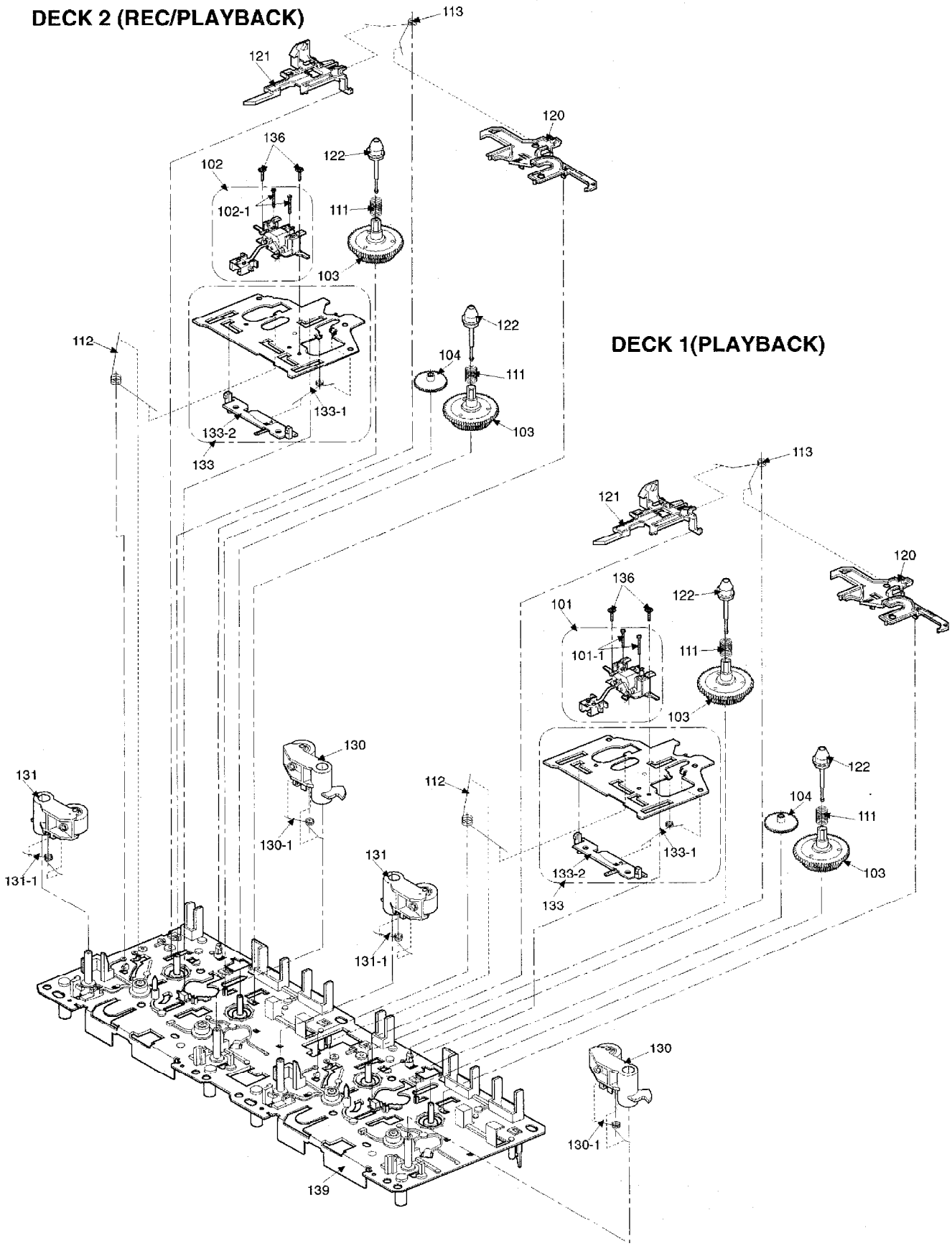

K POWER CIRCUIT
IC501
RSN3404
HIC
2SC2785FTA
PROTECTOR
2SC2785FTA
SIGNAL DETECTOR
2SD1762E
REGULATOR
2SA933SSTA
STABILIZER
2SB1185E
REGULATOR
2SD1762E
REGULATOR
2SB621ARTA
FAN MOTOR DRIVE
2SC2001KTA
FAN MOTOR DRIVE
2SC2785FTA
PROTECTOR
2SC2785FTA
RELAY DRIVE
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q561
Q562
Q563
Q564
Q565
Q567
Q568
Q585
Q584
Q587,Q588
D561,D562,D563,D564
1SS254TA
SPEAKER
(Lch)
(Rch)
FAN MOTOR
TO D MAIN CIRCUIT (CP503) (PAGE 53)
TO D MAIN CIRCUIT (CP502) (PAGE 53)
TO G OPERATION CIRCUIT (W504) (PAGE 40)
TO L TRANSFORMER CIRCUIT (CP501) (PAGE 57)...GN,GCS (PAGE 58)...GC,GT
Q REGULATOR TRANSISTOR CIRCUIT
L TRANSFORMER CIRCUIT FOR GN/GCS
U POWER SWITCH CIRCUIT
T501
POWER TRANSFORMER
F1
250V 1.6A
AC IN
230V~240...GN
230V...GCS
50Hz
1...GN
2...GCS
TO K POWER CIRCUIT (W501) (PAGE 57)


R DETECTING SWITCH (1) CIRCUIT
S DETECTING SWITCH (2) CIRCUIT
S5 DISC NUMBER DET
S3 UP POSITION DET
S2 PLAY POSITION DET
W1
W2
DNT
GND
SW3
SW2
CN1
S1 STOCKER POSITION DET
S4 TRAY OPEN DET
REV
FWD
VSS
VCC
IC1
DIRECTION SELECT
DRIVE
BA6418N MOTOR DRIVE
TO E PANEL CIRCUIT (CN605) (PAGE 50)
O LOADING MOTOR CIRCUIT
U POWER SWITCH CIRCUIT
L TRANSFORMER CIRCUIT FOR GC/GT
S501
W310
W309
T501 POWER TRANSFORMER
F1 250V 3.15A
CP501
TO K POWER CIRCUIT (W501) (PAGE 57)
FP1
FP2
JK500 AC IN 110V/127V 220V/240V...GC,GT 50Hz
W503
W502
W507
W506
W505
W504
S502
F2 250V 1.6A
P VOLTAGE SELECTOR CIRCUIT
F LED CIRCUIT
IC606
D846
D845
D842
D843
D844
R767 680
R758 680
R757 680
R755 680
R756 680
R750 680
R749 680
R752 680
R751 680
R753 680
R754 680
R798 1K
R799 1K
C681 47P
C682 0.1
W601B
DICLK
DDATA/ASCLK
GND
5V
+B(C)
TO E PANEL CIRCUIT (W601A) (PAGE 48)
D842-D846 SPR505MDTT
IC606 BU2090F-E2 IO EXPANDER

■ Troubleshooting Guide

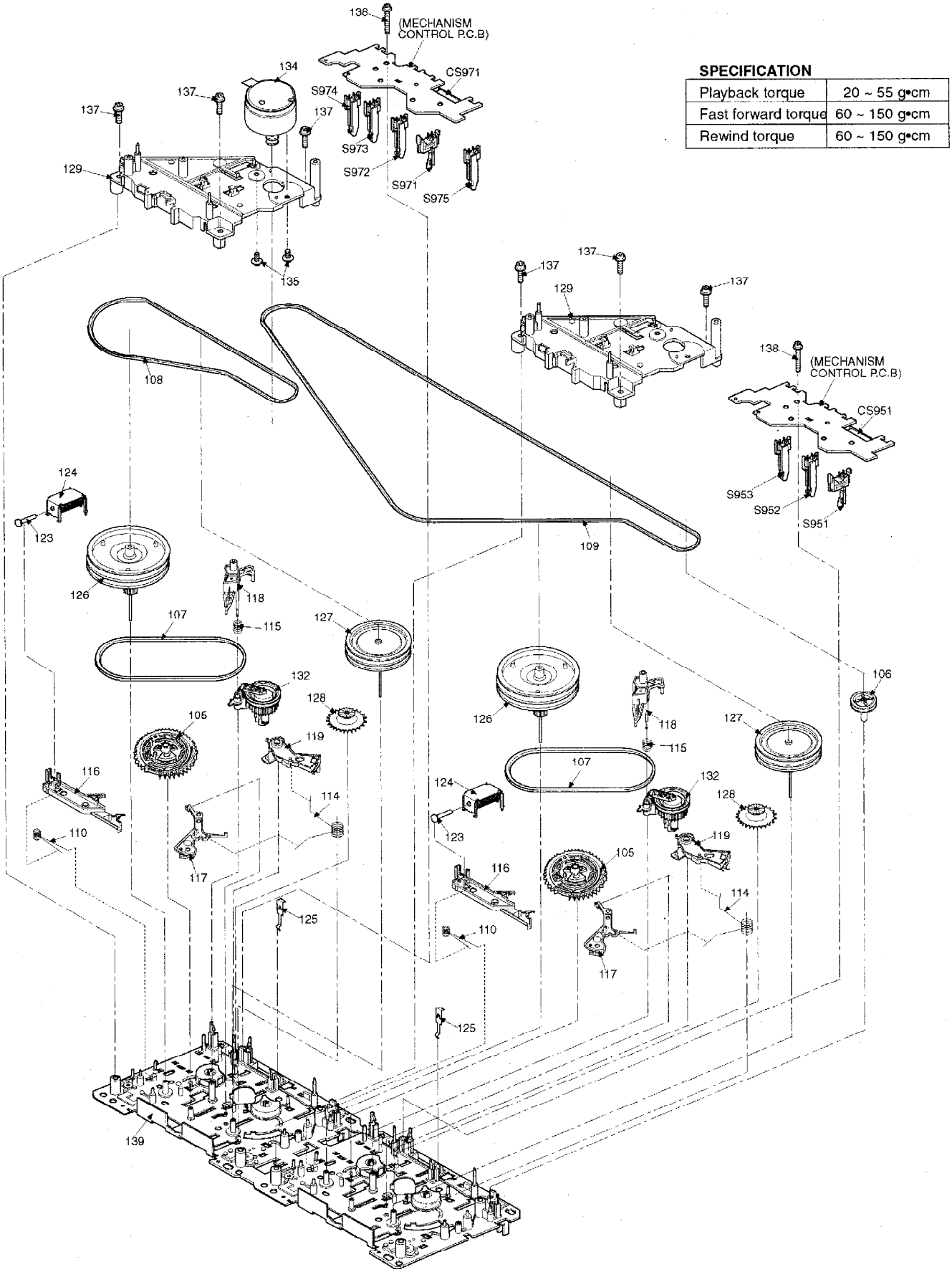

No CD playback
Does the test disc rotate?
NO
YES
Check if TOC reading is performed.
NO
YES
Does playing time appear the display?
No access
YES
Are there outputs at pins ① and ③ of IC702?
NG
①BCLK ②LRCK ③SRDATA
OK
IC702 failure
Are there outputs at pins ⑦ and ⑧ of IC702?
OK
NO
IC702 failure
Check the unit
Below 700mV or no output
Check output at of TJ701 (RF)
At about 1 Vp-p
Is pin ㉜ of IC702 at "HIGH" or "LOW"? (CLVS)
"L"
IC702 failure
"H"
Is there an output at pin ㉝ of IC702? (KICK)
NG
OK
R726 47kΩ failure
Remove the test disc
Turn on PLAY switch (S831)
Does optical pickup move?
NO
Optical pickup moves toward inner track once,and then toward outer track slightly (2 or 3mm)
Does lens make vertical movements?
NO
YES
Does laser diode come on ?
NO
YES
Measure voltage across R701.
Below 0.8V
Load the test disc
Turn on PLAY switch (S831)
Above 0.8V
Optical pickup failure (Laser diode NG)
Check pin ⑮ of IC701. (RFDET)
Changes from "H" to "L".
Remains at "H"
Check pin ⑮ of IC702 (FLOCK)
Changes from "H" to "L"
Remains at "H"
IC702 failure
Check pin ㉙ of IC701. (FE)
Upper and lower amplitudes of waveform are equal.
No waveform or upper and lower amplitudes are not equal.
Is there an output at pin ㉙ of IC702? (FBA_)
Within 2.5V±1.25V limit.
Optical pickup failure
Without 2.5V±1.25V limit.
IC702 failure
IC701 failure
Check the position of optical pickup.
At outer or around middle track
Is pin ① of CN702 at "HIGH" or "LOW" ?
"H"
Inner track limit switch is short-circuited
At inner track
Is pin ① of CN702 at "HIGH" or "LOW" ?
"L" (0V)
Inner track limit switch is defective or disconnected.
Are there outputs at pins ⑮ and ⑯ of IC703?
OK
Traverse deck failure
NG
Is there an output at pin ㉑ of IC702? (TRV)
OK
IC703 failure
NG
IC702 failure
Are there outputs at pins ㉒ and ㉓ of IC703?
NG
OK
Optical pickup failure
Is there an output at pin ㉖ of IC702? (FOD)
OK
IC703 failure
NG
IC702 failure
Measure voltage across R701.
Below 0.4V
Above 0.4V
Optical pickup failure
Measure voltage between ⑧ and ⑤ of Q701
Below 0.6V
IC701 failure
Above 0.6V
Q701 or optical pickup is defective.
Is there an output at pin ㉔ of IC702? (ECM)
Remain at 2.5V (High impedance)
IC702 failure
Changes from 2.5V to "L" (High impedance)
IC703 failure

■ Mechanism Parts Location (RAA3404)



SPECIFICATION

Playback torque	20 ~ 55 g•cm
Fast forward torque	60 ~ 150 g•cm
Rewind torque	60 ~ 150 g•cm



■ Mechanism Parts List

Notes : [M] in Remarks column indicates parts supplied by **MESA**

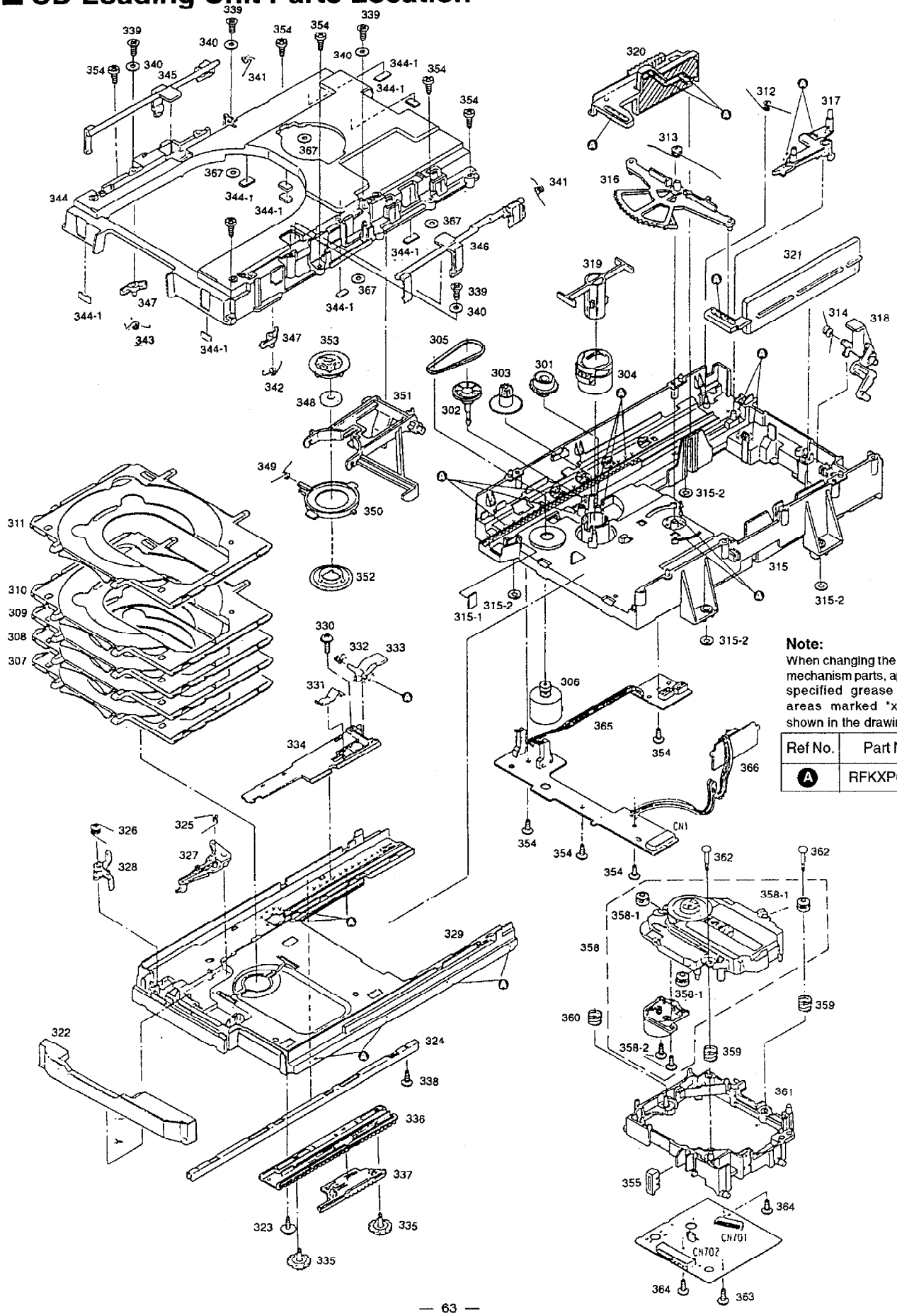
Ref No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK	
101	RED0038	P/B HEAD BLOCK ASS'Y	
101-1	RHE5152ZB	SCREW	
102	RED0037	R/P HEAD BLOCK ASS'Y	
102-1	RHE5152ZB	SCREW	
103	RDG0300	REEL TABLE BASE	
104	RDG0301	GEAR	
105	RDK0026	GEAR	
106	RDR0029	RELAY PULLY	
107	RDV0033-1	BELT	
108	RDV0034	BELT	
109	RDV0035	BELT	
110	RUW147ZA	SPRING	
111	RMB0400	REEL TABLE SPRING	
112	RMB0403	SPRING	
113	RMB0404	SPRING	
114	RMB0406	SPRING	
115	RMB0408	SPRING	
116	RML0370	LEVER	
117	RML0371	LEVER	
118	RML0372	ARM	
119	RML0374	LEVER	
120	RMM0131	LEVER	
121	RMM0133	LEVER	
122	RMQ0519	REEL TABLE HEAD	
123	RMS0398-1	SHAFT	
124	RSJ0003	PLUNGER	
125	RUS609ZC	SPRING	
126	RXF0049	FLYWHEEL ASS'Y	
127	RXF0050	FLYWHEEL ASS'Y	
128	RXG0040	GEAR	
129	RMK0283	PLATE	
130	RXL0124	PINCH ROLLER ASS'Y	
130-1	RMB0401	SPRING	
131	RXL0125	PINCH ROLLER ASS'Y	
131-1	RMB0402	SPRING	
132	RXL0126	GEAR	
133	RXQ0412	ROD	
133-1	RMB0405	SPRING	
133-2	RMM0132	ROD	
134	REM0055	MOTOR ASS'Y	
135	RHD26022	SCREW	
136	XTW2+5L	SCREW	
137	XTW26+10S	SCREW	
138	XYC2+JF17	SCREW	
139	RFKJXED70-K	CHASSIS ASS'Y	

■ Loading Mechanism Parts List

Notes : [M] in Remarks column indicates parts supplied by **MESA**

Ref No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	RDG0309	RELAY GEAR	[M]
302	RDG0310	PULLEY GEAR	[M]
303	RDG0311	DRIVE GEAR	[M]
304	RDG0313	UP/DOWN GEAR LEVER	
305	RDV0036	BELT	[M]
306	RFKPDS790PK1	MOTOR ASS'Y	[M]
307	RGQ0170-K	TRAY 1	[M]
308	RGQ0171-K	TRAY 2	[M]
309	RGQ0172-K	TRAY 3	[M]
310	RGQ0173-K	TRAY 4	
311	RGQ0174-K	TRAY 5	
312	RME0170	LOCK LEVER SPRING	[M]
313	RME0179	ASSIST SPRING	[M]
314	RME0180	TRAY HOLDER SPRING	
315	RFKNACH430GC	MECHA BASE ASS'Y	
315-1	RMF0221	FELT	
315-2	RMG0402-K	RUBBER WASHER	
316	RML0379	CHANGE LEVER	[M]
317	RML0380	LOCK LEVER	[M]
318	RML0383	TRAY HOLDING LEVER	
319	RML0385	UP/DOWN LEVER	
320	RMM0139	SLIDE PLATE LEVER (1	
321	RMM0141	SLIDE PLATE LEVER (2	
322	RGQ0175-K	TRAY ORNAMENT	
323	RHD20010	SCREW DRIVE RACK	[M]
324	RMA0868	SUPPORT ANGLE	[M]
325	RME0171	BASE LOCK LEVER SP	
326	RME0172	CARRIER LOCK LEVER S	
327	RML0377	BASE LOCK LEVER	
328	RML0378	CARRIER LOCK LEVER	
329	RMR0884-K	TRAY BASE	
330	RHD20009-1	SCREW CARRIER	
331	RMC0274	TRAY FOOK SPRING	[M]
332	RME0173	CARRIER ARM SPRING	
333	RML0376-1	CARRIER ARM	
334	RMM0137	CARRIER LEVER	
335	RDG0312	SPEED UP GEAR	[M]
336	RMM0134	DRIVE GEAR	[M]
337	RMM0135	CUSHION RACK	[M]
338	XTN2+6F	SCREW SUPPORT ANGLE	[M]
339	XTS3+8J	SCREW	
340	XWE4E10	CUSHION	
341	RME0178	HOLDING SPRING	
342	RME0181	UP PREVENTION SP (R)	[M]
343	RME0182	UP PREVENTION SP (L)	[M]
344	RFKNACH430GD	MECHA COVER ASS'Y	
344-1	RMF0221	FELT	
345	RML0381	HOLDING CATCH (1)	
346	RML0382	HOLDING CATCH (2)	
347	RML0384	UP PREVENTION LEVER	[M]
348	RHM245ZA	MAGNET	[M]
349	RME0174	CLAMP BASE SPRING	
350	RFKNACH430GE	CLAMP BASE ASS'Y	
351	RML0388-1	CLAMP LEVER	
352	RMR0761-W	MAGNET HOLDER LEVER	
353	RMR0899-K	FIXED PLATE	
354	XTB3+10JFZ	SCREW PB, LID	
355	RMR0975-W	TRV CAP	
358	RAE0150Z	TRAVERSE UNIT	
358-1	SHGD113-1	FLOATING RUBBER	
358-2	SNSD38	SCREW	
359	RME0109	FLOATING SPRING (1)	
360	RME0142	FLOATING SPRING (2)	
361	RMK0293	TRAVERSE CHASSIS	[M]
362	RMS0123-1	FIXED PIN	
363	XTN2+6G	SCREW	
364	XTV2+6G	SCREW	
365	REZ0792	3P WIRE KIT	
366	REZ0793	3P WIRE KIT	
367	RMG0430-Q	RUBBER TUBE	

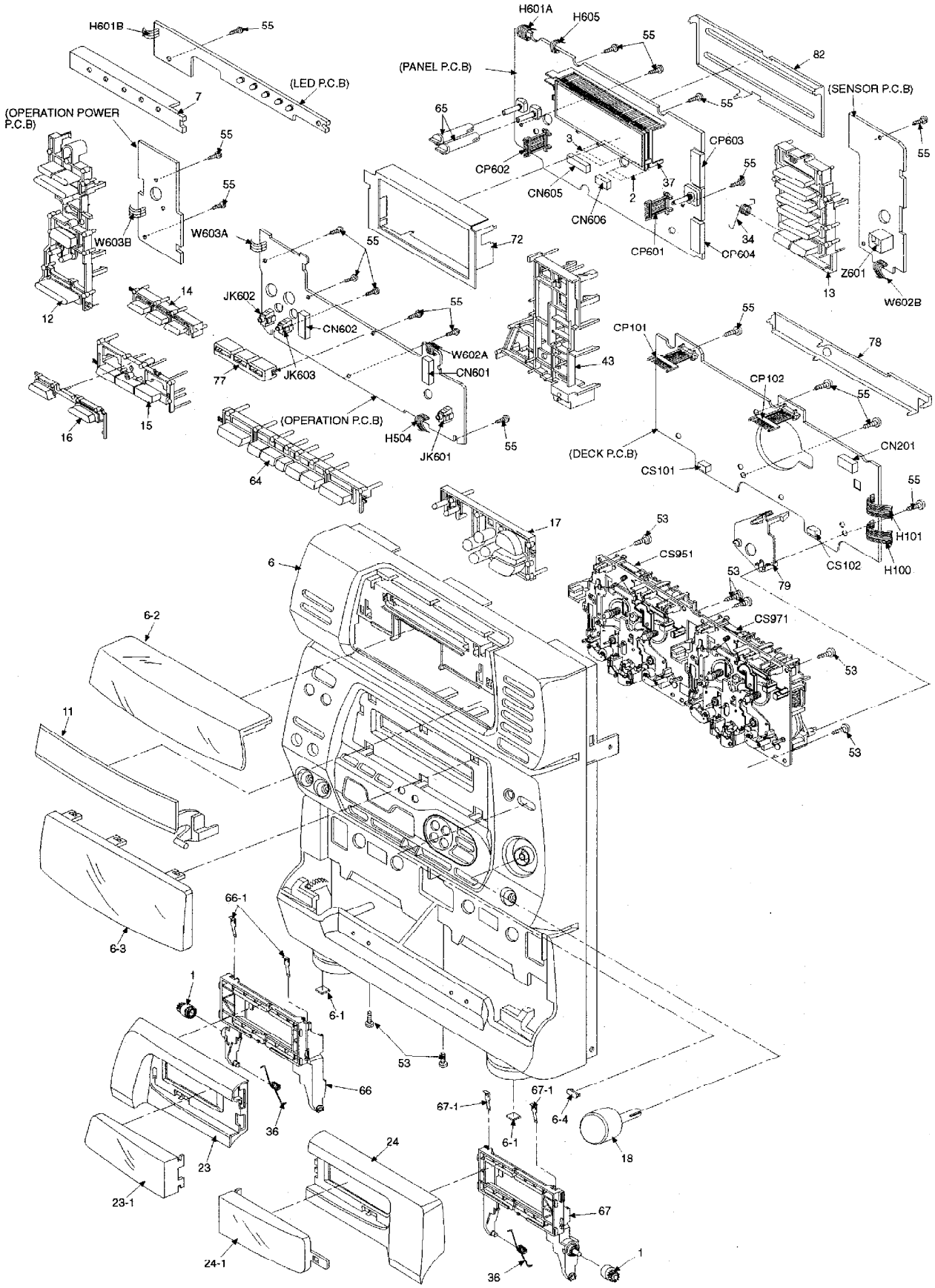
■ CD Loading Unit Parts Location

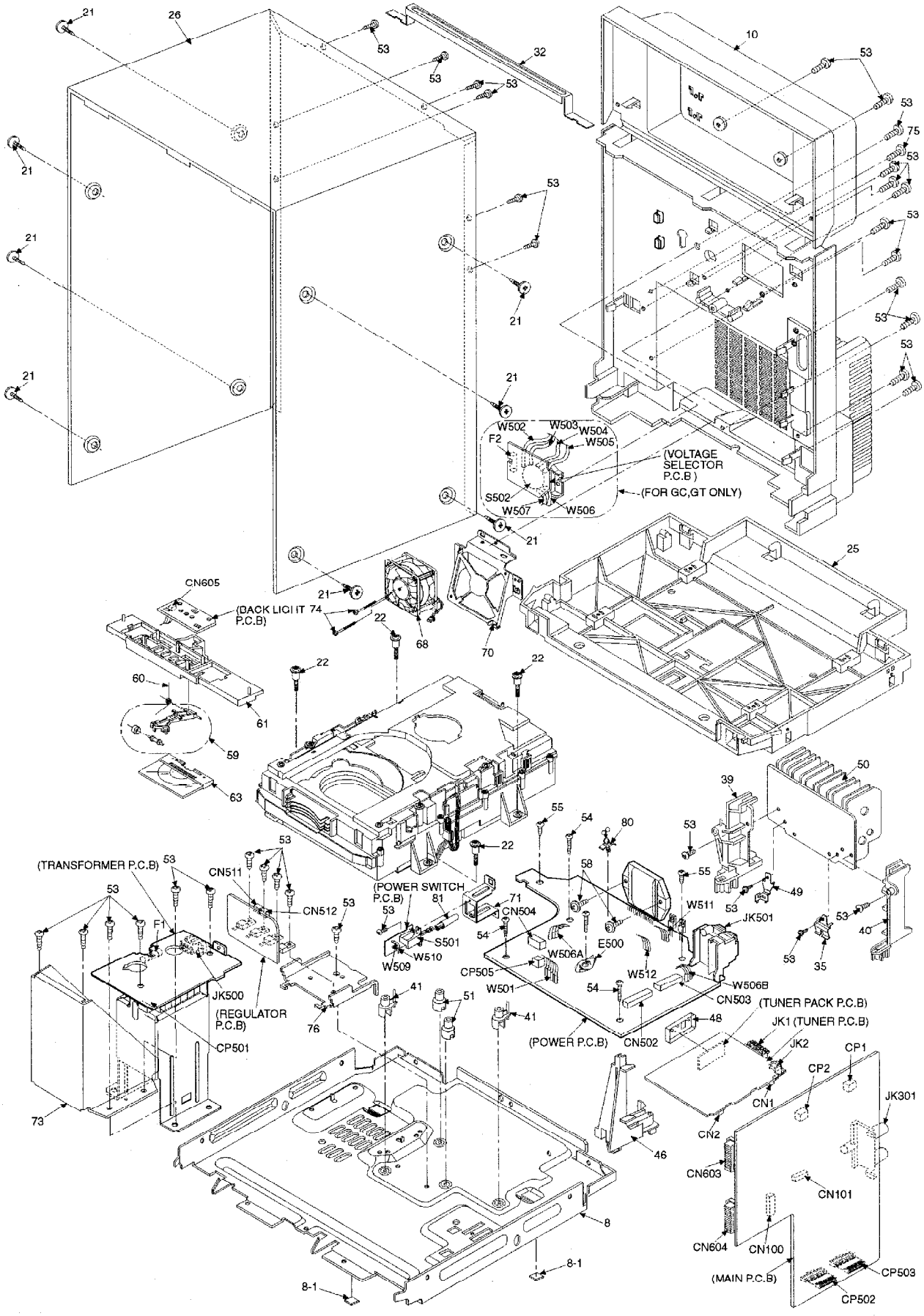


Note:
When changing the loading mechanism parts, apply the specified grease to the areas marked "xxx" as shown in the drawing.

Ref No.	Part No.
Ⓐ	RFKXPG671

■ Cabinet Parts Location




21
26
53
32
10
75
W502
W503
W504
W505
F2
(VOLTAGE SELECTOR P.C.B)
(FOR GC,GT ONLY)
S502
W507
W506
CN605
(BACK LIGHT P.C.B)
74
22
68
70
25
60
61
59
63
55
54
80
39
50
58
49
W511
JK501
40
35
(TRANSFORMER P.C.B)
CN511
CN512
F1
(POWER SWITCH P.C.B)
81
71
CN504
S501
W509
W510
E500
W506A
CP505
W501
W512
W506B
CN503
(TUNER PACK P.C.B)
JK1 (TUNER P.C.B)
JK2
CP1
CP2
CN1
CN2
JK301
JK500
(REGULATOR P.C.B)
CP501
76
41
51
(POWER P.C.B)
CN502
48
46
CN603
CN101
CN604
CN100
(MAIN P.C.B)
CP503
CP502
73
8
8-1

■ Repalcement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list .
* The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
Parts without these indications can be used for all areas.
* [M] Indicates in the Remarks columns indicates parts supplied by **MESA.**
* Warning : This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG : • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hertsteller spezifizierte einheit ausgetauscht werden.

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RDG0129	DAMPER GEAR	[M]
2	REE0657	14 FFC	
3	REE0658	23P FFC	
6	RFKGACH75GCK	FRONT PANEL ASS'Y	[M]
6-1	RKA0059-K	LEG RUBBER	[M]
6-2	RKW0415-Q	CHANGER WINDOW	[M]
6-3	RKW0416-Q	FL WINDOW	[M]
6-4	RKW0414-Q	SENSOR WINDOW	[M]
7	RFKNACH430GB	5 LED REFLECTOR ASSY	
8	RFKJACH430GK	BOTTOM CHASSIS ASS'Y	
8-1	RKA0059-K	LEG RUBBER	[M]
10	RKF0461J-K	REAR PANEL	[M](GC,GT)
10	RKF0461Q-K	REAR PANEL	[M](GN)
10	RKF0461P-K	REAR PANEL	[M](GCS)
11	RGK0767A-K	CHANGER LID	[M]
12	RGU1303-K	POWER BUTTON	[M]
13	RGU1304-K	DISK BUTTON	[M]
14	RGU1300-C	FUNCTION BUTTON	[M]
15	RGU1301-K	CONTROL BUTTON (A)	[M]
16	RGU1302-K	CONTROL BUTTON (B)	[M]
17	RGU1306-K	EQ BUTTON	[M]
18	RGW0238-K	MAIN VOLUME KNOB	[M]
21	RHD30007	SCREW (TRANS)	
22	RHD30048	SCREW	[M]
23	RFKLACH75GCA	CASSETTE LID ASS'Y(L)	[M]
23-1	RKW0412-Q	CASSETTE WINDOW (L)	[M]
24	RFKLACH75GCB	CASSETTE LID ASS'Y(R	[M]
24-1	RKW0413-Q	CASSETTE WINDOW (R)	[M]
25	RKM0309-K	CHANGER CHASSIS	[M]
26	RKM0310A-K	CABINET	[M]
32	RMA0938	REAR SUPPORT ANGLE	[M]
34	RMB0447	CD LID SPRING	[M]
35	RMC0158-S	TR FIXTURE	[M]
36	RMB0446	CASS OPEN SPRING	[M]
37	RMN0351-1	FL HOLDER	[M]
39	RMR0653-K	HEAT SINK SUPPORT L	[M]
40	RMR0654-K	HEAT SINK SUPPORT R	[M]
41	RMR0741-X	PCB SUPPORT (PIN)	[M]
43	RMR0908-X	PANEL PCB SUPPORT	[M]
46	RMR0821-X	MAIN PCB SUPPORT	[M]
48	RSC0027-1	TUNER PACK	
49	RSC0362	EARTH TERMINAL	[M]
50	RXX0177	HEAT SINK UNIT	[M]
51	SHE187-4	SPACER (TRANS)	[M]
53	XTB3+10JFZ	SCREW	
54	XTB3+20J	SCREW	
55	XTBS26+10J	SCREW	
58	XTW3+15T	SCREW	
59	RFKNACH34PK	HOLDER ARM ASSEMBLY	[M]
60	RME0221	HOLDER ARM SPRING	[M]
61	RMN0350	8 LED HOLDER	[M]
63	RKW0418-Q	8 LED REFLECTOR	[M]
64	RGU1305-K	DECK BUTTON	[M]
65	RGW0237-K	MIC KNOB	[M]
66	RFKLACH330AK	CASS. HOLDER ASS'Y(L)	[M]
66-1	RUS757ZAA	CASS. HALF SPRING	[M]
67	RFKLACH330BK	CASS. HOLDER ASS'Y(R)	[M]
67-1	RUS757ZAA	CASS. HALF SPRING	[M]
68	FBA08A12M2CZ	FAN	[M]
70	RMA0980	FAN HOLDER	[M]
71	RMA0992	POWER SWITCH ANGLE	[M]
72	RFKNACH75GCK	FL SHIELD PLATE ASSY	[M]
73	RSC0461	TRANS. SHIELD PLATE	[M]
74	XTB3+30J	SCREW	
75	XYN3+C6FZ	SCREW	
76	RMY0187	SUB HEAT SINK	[M]
77	RMN0348	FUNCTION LED HOLDER	[M]
78	RSC0452-1	DECK PCB SHIELD PLAT	[M]
79	RMR0909-X	DECK PCB SUPPORT	[M]
80	RMR0824-W	CLAMPER	
81	RGU1219-K	MAIN POWER BUTTON	[M]
82	RSC0447	FL SHIELD PLATE (PCB)	[M]
		INTEGRATED CIRCUITS	
IC1	LA1832A	IC, IF/MPX	
IC1	BA6418N	IC, DRIVER	
IC2	LC7218	IC, PLL	
IC101	M51167BFP-TB	IC, R/P	
IC102	BA7755A	IC, SW	
IC103	CXA1102M-T4	IC, DOLBY	
IC104	BU4066BCF-E2	IC, ANALOG SW	[M]
IC105	BU2040F-E2	IC, I/O	[M]
IC301	BU4052BCF-E2	IC, ANALOG SW	
IC302	M62422FPE1	IC, AUDIO	
IC303	M51131L-702	IC, VCA	
IC304	BU2090F-E2	IC, IO EXPANDER	[M]
IC305	BA4558FDXE2	IC, BUFFER AMP	[M]
IC306	BA4558FDXE2	IC, BUFFER AMP	[M]
IC308	BU4066BCF-E2	IC, ANALOG SW	[M]
IC401	LM2940T5M	IC, REGULATOR	⚠
IC501	RSN3404	IC, HIC	⚠
IC601	M38197MA136F	IC, U COM	[M]
IC602	TA2011S	IC, MIC AMP	
IC603	BA3835F-E1	IC, SPE ANA	
IC604	M65843FPE1	IC, ECHO	
IC605	BU2090F-E2	IC, IO EXPANDER	[M]
IC606	BU2090F-E2	IC, IO EXPANDER	[M]
IC607	DAP803	IC, DIODE ARRAY	
IC608	DAP803	IC, DIODE ARRAY	
IC609	DAP803	IC, DIODE ARRAY	
IC701	AN8835SBE1	IC, SERVO AMP.	
IC702	MN662741RPA	IC, DIGITAL LSI	
IC703	AN8389SE1	IC, COIL/MOTOR DRIVE	
IC951	0N2180RLC	IC,HALL	
IC971	0N2180RLC	IC,HALL	
		TRANSISTORS	
Q1	2SK544F-AC	TRANSISTOR	
Q2	2SC2786MTA	TRANSISTOR	
Q3	2SC2787FL1TA	TRANSISTOR	
Q4	2SC2787FL1TA	TRANSISTOR	
Q6	2SC2787LTA	TRANSISTOR	
Q7	RVTDTA143XST	TRANSISTOR	
Q8	2SC1740SSTA	TRANSISTOR	
Q9	2SC1740SSTA	TRANSISTOR	
Q10	2SC2785FETA	TRANSISTOR	

Ref No.	Part No.	Part Name & Description	Remarks
Q11	2SC2785FETA	TRANSISTOR	
Q12	2SC2787LTA	TRANSISTOR	(GCS,GC,GT)
Q13	2SC2785FETA	TRANSISTOR	(GCS,GC,GT)
Q14	2SC2785FETA	TRANSISTOR	(GCS,GC,GT)
Q15	2SA952LTA	TRANSISTOR	[M](GCS,GC,GT)
Q16	2SA952LTA	TRANSISTOR	[M](GCS,GC,GT)
Q17	2SA952LTA	TRANSISTOR	[M](GCS,GC,GT)
Q18	2SA933SSTA	TRANSISTOR	(GCS,GC,GT)
Q19	2SA933SSTA	TRANSISTOR	(GCS,GC,GT)
Q20	2SA933SSTA	TRANSISTOR	(GCS,GC,GT)
Q21	2SA952LTA	TRANSISTOR	[M](GCS,GC,GT)
Q22	2SC1740SSTA	TRANSISTOR	(GCS,GC,GT)
Q101	2SJ164QRTA	TRANSISTOR	
Q102	2SJ164QRTA	TRANSISTOR	
Q103	2SJ164QRTA	TRANSISTOR	
Q104	2SJ164QRTA	TRANSISTOR	
Q105	BA1L4ZTA	TRANSISTOR	[M]
Q106	BA1L4ZTA	TRANSISTOR	[M]
Q107	BA1L4ZTA	TRANSISTOR	[M]
Q108	BA1L4ZTA	TRANSISTOR	[M]
Q109	BA1L3ZTA	TRANSISTOR	[M]
Q110	BA1L3ZTA	TRANSISTOR	[M]
Q115	2SD1020HTA	TRANSISTOR	[M]
Q116	2SD1020HTA	TRANSISTOR	[M]
Q117	BA1L4MTA	TRANSISTOR	[M]
Q118	2SC2785FTA	TRANSISTOR	
Q119	2SC2785FTA	TRANSISTOR	
Q120	2SC2785FTA	TRANSISTOR	
Q121	2SC2785FTA	TRANSISTOR	
Q151	BA1L4ZTA	TRANSISTOR	[M]
Q152	BA1L4ZTA	TRANSISTOR	[M]
Q153	2SC1740SLNET	TRANSISTOR	
Q154	2SC1740SLNET	TRANSISTOR	
Q171	2SD1302STA	TRANSISTOR	
Q173	BA1L4ZTA	TRANSISTOR	[M]
Q174	2SC2785FTA	TRANSISTOR	
Q175	2SD1302STA	TRANSISTOR	
Q176	2SD1302STA	TRANSISTOR	
Q179	2SC2784FTA	TRANSISTOR	[M]
Q203	2SD965RTA	TRANSISTOR	
Q204	2SK301QTA	TRANSISTOR	[M]
Q205	BA1L4ZTA	TRANSISTOR	[M]
Q206	2SB621RTA	TRANSISTOR	
Q207	2SB621RTA	TRANSISTOR	
Q208	BA1A4ZTA	TRANSISTOR	[M]
Q209	BA1A4ZTA	TRANSISTOR	[M]
Q218	BN1A4MTA	TRANSISTOR	[M]
Q220	BN1L3NTA	TRANSISTOR	[M]
Q301	2SK301QTA	TRANSISTOR	[M]
Q302	2SK301QTA	TRANSISTOR	[M]
Q303	2SC2785FTA	TRANSISTOR	
Q304	2SC2785FTA	TRANSISTOR	
Q305	2SD1450STA	TRANSISTOR	
Q306	2SD1450STA	TRANSISTOR	
Q307	2SD1450STA	TRANSISTOR	
Q308	BN1A4MTA	TRANSISTOR	[M]
Q309	BN1A4MTA	TRANSISTOR	[M]
Q311	BN1A4MTA	TRANSISTOR	[M]
Q401	BA1L3ZTA	TRANSISTOR	[M]
Q402	2SD2037ETA	TRANSISTOR	[M]⚠
Q403	2SD2037ETA	TRANSISTOR	[M]⚠
Q404	2SD2037ETA	TRANSISTOR	[M]⚠
Q405	BA1F4MTA	TRANSISTOR	[M]⚠
Q406	2SB621ARTA	TRANSISTOR	⚠
Q407	2SC2785FTA	TRANSISTOR	
Q409	2SB621ARTA	TRANSISTOR	
Q410	2SC2785FTA	TRANSISTOR	⚠
Q451	2SD1762E	TRANSISTOR	[M]⚠
Q453	2SD1762E	TRANSISTOR	[M]⚠
Q454	2SD1762E	TRANSISTOR	[M]⚠
Q501	2SC2785FTA	TRANSISTOR	
Q502	2SD1762E	TRANSISTOR	[M]⚠
Q503	2SC2785FTA	TRANSISTOR	
Q504	2SA933SSTA	TRANSISTOR	⚠
Q505	2SD1762E	TRANSISTOR	[M]⚠
Q506	2SC2785FTA	TRANSISTOR	
Q507	2SB1185E	TRANSISTOR	⚠
Q508	2SD1762E	TRANSISTOR	[M]⚠
Q509	2SD1762E	TRANSISTOR	[M]⚠
Q561	2SC2785FTA	TRANSISTOR	
Q562	2SC2785FTA	TRANSISTOR	
Q563	2SC2785FTA	TRANSISTOR	
Q564	2SB621ARTA	TRANSISTOR	
Q565	2SC2001KTA	TRANSISTOR	
Q567	2SC2785FTA	TRANSISTOR	
Q568	2SC2785FTA	TRANSISTOR	
Q601	BA1L4MTA	TRANSISTOR	[M]
Q602	2SC2785FTA	TRANSISTOR	
Q603	2SC2785FTA	TRANSISTOR	
Q604	2SB621RTA	TRANSISTOR	
Q605	2SC2785FTA	TRANSISTOR	
Q606	2SC2785FTA	TRANSISTOR	
Q607	2SC2785FTA	TRANSISTOR	
Q612	2SC2785FTA	TRANSISTOR	
Q613	BN1A4MTA	TRANSISTOR	[M]
Q701	2SB709S	TRANSISTOR	

Ref No.	Part No.	Part Name & Description	Remarks
		DIODES	
D1	SVC211SPA-AL	DIODE	
D2	SVC211SPA-AL	DIODE	
D3	SVC211SPA-AL	DIODE	
D4	MTZJ5R1CTA	DIODE	[M]
D5	RVD1SS133TA	DIODE	
D6	RVDSVC321	DIODE	(GCS,GC,GT)
D7	RVDSVC321	DIODE	(GCS,GC,GT)
D8	RVDSVC321	DIODE	(GCS,GC,GT)
D9	RVDSVC321	DIODE	(GCS,GC,GT)
D10	RVD1SS133TA	DIODE	(GCS,GC,GT)
D11	RVD1SS133TA	DIODE	(GCS,GC,GT)
D12	RVD1SS133TA	DIODE	(GCS,GC,GT)
D13	RVD1SS133TA	DIODE	(GCS,GC,GT)
D171	1SS254TA	DIODE	
D172	MTZJ4R7BTA	DIODE	
D173	1SS254TA	DIODE	
D174	MTZJ3R6BTA	DIODE	[M]
D175	1SS254TA	DIODE	
D201	1SS254TA	DIODE	
D202	1SS254TA	DIODE	
D301	MTZJ6R8CTA	DIODE	
D303	1SS254TA	DIODE	
D304	1SS254TA	DIODE	
D308	1SS254TA	DIODE	
D401	1SS254TA	DIODE	
D402	1SS254TA	DIODE	
D403	MTZJ7R5CTA	DIODE	⚠
D404	MTZJ6R8BTA	DIODE	⚠
D405	1SS254TA	DIODE	
D406	1SS254TA	DIODE	
D407	MA167TA	DIODE	
D408	1D3E	DIODE	[M]
D409	1D3E	DIODE	[M]
D410	MTZJ33CTA	DIODE	[M]
D413	MTZJ5R6BTA	DIODE	⚠
D415	1D3E	DIODE	[M]
D416	1D3E	DIODE	[M]
D417	1D3E	DIODE	[M]
D452	MTZJ13ATA	DIODE	⚠
D501	RL154M11	DIODE	
D502	RL154M11	DIODE	
D503	1N5402BM21	DIODE	⚠
D504	1N5402BM21	DIODE	⚠
D505	1N5402BM21	DIODE	⚠
D506	1N5402BM21	DIODE	⚠
D507	MTZJ12BTA	DIODE	
D516	MTZJ15CTA	DIODE	

Ref No.	Part No.	Part Name & Description	Remarks
D517	MTZJ15BTA	DIODE	[M]
D518	MTZJ9R1ATA	DIODE	⚠
D561	1SS254TA	DIODE	
D562	1SS254TA	DIODE	
D563	1SS254TA	DIODE	
D564	1SS254TA	DIODE	
D565	1SS254TA	DIODE	
D566	1SS254TA	DIODE	
D567	MTZJ8R2BTA	DIODE	[M]
D568	MTZJ11CTA	DIODE	
D569	MA700ATA	DIODE	
D570	1SS254TA	DIODE	
D571	MTZJ20CTA	DIODE	⚠
D601	1SS291TA	DIODE	
D602	1SS291TA	DIODE	
D603	1SS254TA	DIODE	
D604	1SS254TA	DIODE	
D605	MA167TA	DIODE	
D606	MA167TA	DIODE	
D607	MA167TA	DIODE	
D608	MA167TA	DIODE	
D609	MTZJ5R6BTA	DIODE	
D610	MA167TA	DIODE	
D611	MA167TA	DIODE	
D612	MA167TA	DIODE	
D613	MA167TA	DIODE	(GN)
D614	MA167TA	DIODE	(GN)
D615	MTZJ5R1BTA	DIODE	
D616	1SS254TA	DIODE	
D617	1SS254TA	DIODE	
D618	1SS254TA	DIODE	
D619	SLR342MCTB7	DIODE	
D620	SLR342MCTB7	DIODE	
D621	SLR342MCTB7	DIODE	
D622	SLR342MCTB7	DIODE	
D623	SLR342DCTB7	DIODE	
D624	SLR342DCTB7	DIODE	
D625	SLR342DCTB7	DIODE	
D626	SLR342DCTB7	DIODE	
D627	SLR-325MC	DIODE	
D628	SLR-325MC	DIODE	
D629	SLR-325MC	DIODE	
D630	SLR-325MC	DIODE	
D631	SLR-325MC	DIODE	
D632	SLR-325MC	DIODE	
D633	SLR-325MC	DIODE	
D634	SLR325DCT31	DIODE	
D635	SLR325DCT31	DIODE	
D636	SLR-325MC	DIODE	
D637	SLR325DCT31	DIODE	
D638	SLR325DCT31	DIODE	
D639	SLR-325MC	DIODE	
D640	SLR325DCT31	DIODE	
D641	SLR325DCT31	DIODE	
D642	SPR505MDTT	DIODE	
D643	SPR505MDTT	DIODE	
D644	SPR505MDTT	DIODE	
D645	SPR505MDTT	DIODE	
D646	SPR505MDTT	DIODE	
D651	SLR-325MC	DIODE	
D652	SLR-325MC	DIODE	
D654	MA167TA	DIODE	
D659	1SS254TA	DIODE	
D951	MA165TA	DIODE	
D971	MA165TA	DIODE	
		VARIABLE RESISTORS	
VR101	RRN6B05B24TA	SEMIFIXED VR	
VR102	RRN6B05B24TA	SEMIFIXED VR	
VR103	RRN6B05B24TA	SEMIFIXED VR	
VR104	RRN6B05B24TA	SEMIFIXED VR	
VR201	RRN6B05B73TA	SEMIFIXED VR	
VR601	RRV09A03B14A	MIC VR	
VR602	RRV09A03B14A	MIC VR	
VR603	RRV16B24104B	JOG VR	
		SWITCHES	
S1	RSH1A005	SW, LEAF	
S2	RSH1A032-U	SW, MECHA	
S3	RSH1A032-U	SW, MECHA	
S4	RSH1A005	SW, LEAF	
S5	RSH1A032-U	SW, MECHA	
S501	ESB-8249V	SW, POWER	⚠
S502	ESE37263	VOLTAGE SELECTOR	(GC,GT) ⚠
S601	EVQ21405R	SW, POWER	
S602	EVQ21405R	SW, PLAY TIMER	
S603	EVQ21405R	SW, REC TIMER	
S604	EVQ21405R	SW, RANDOM	
S605	EVQ21405R	SW, REPEAT	
S606	EVQ21405R	SW, EASY EDIT	
S608	EVQ21405R	SW, TIMER/CLOCK	
S609	EVQ21405R	SW, EQ/SPACE	
S610	EVQ21405R	SW, G. EQ	(GCS,GN)
S611	EVQ21405R	SW, V.BASS	
S612	EVQ21405R	SW, SHI. DOWN	
S613	EVQ21405R	SW, SHI. UP	
S614	EVQ21405R	SW, SHI. LEFT	
S615	EVQ21405R	SW, SHI. RIGHT	
S616	EVQ21405R	SW, KARAOKE	
S617	EVQ21405R	SW, REW/DOWN	
S618	EVQ21405R	SW, FF/UP	
S620	EVQ21405R	SW, STOP/TU MODE	
S621	EVQ21405R	SW, MRY/SET	
S622	EVQ21405R	SW, FM MODE/BP	
S623	EVQ21405R	SW, DECK 1 OPEN	
S624	EVQ21405R	SW, NOR. EDIT	
S625	EVQ21405R	SW, HI SPEED EDIT	
S626	EVQ21405R	SW, REC START	
S627	EVQ21405R	SW, REV MODE	
S628	EVQ21405R	SW, DECK 2 OPEN	
S629	EVQ21405R	SW, DOLBY NR	
S631	EVQ21405R	SW, OPEN /CLOSE	
S632	EVQ21405R	SW, DISC CHECK	
S633	EVQ21405R	SW, DISC 5	
S634	EVQ21405R	SW, DISC 4	
S635	EVQ21405R	SW, DISC 3	
S636	EVQ21405R	SW, DISC 2	
S637	EVQ21405R	SW, DISC 1	
S638	EVQ21405R	SW, DISP/DEMO	
S639	EVQ21405R	SW, AUX	
S640	EVQ21405R	SW, TUNER/BAND	
S641	EVQ21405R	SW, CD	
S642	EVQ21405R	SW, TAPE/DECK 1/2	
S701	RSM0006-P	SW, RESET	
S951	RSH1A018-1U	SW,MODE DETECT	
S952	RSH1A019-2U	SW,TAPE DETECT	
S953	RSH1A019-2U	SW,Cr02 DETECT	
S971	RSH1A018-1U	SW,MODE DETECT	
S972	RSH1A019-2U	SW,TAPE DETECT	
S973	RSH1A019-2U	SW,Cr02 DETECT	
S974	RSH1A019-2U	SW,REC DETECT	
S975	RSH1A019-2U	SW,REC DETECT	
		CONNECTORS	
CN1	RJU063W07T	7P CONNECTOR	
CN1	RJS1A6714	CONNECTOR 14P	
CN2	RJU063W07T	7P CONNECTOR	
CN100	RJS1A5210	10 PINS WIRE HOLDER	[M]
CN101	RJS1A5205	5P CONNECTOR	[M]
CN201	RJS8T7ZA	8 PIN MOLEX	
CN502	RJU005A012	12P FJ CONNECTOR SOC	
CN503	RJU005A012	12P FJ CONNECTOR SOC	
CN504	RJS1A5205	5P CONNECTOR	[M]
CN511	RJS3T6ZA	3P CONNECTOR	[M]

Ref No.	Part No.	Part Name & Description	Remarks
CN512	RJS3T6ZA	3P CONNECTOR	[M]
CN601	RJU071H09M	CONNECTOR	
CN602	RJU071H09M	CONNECTOR	
CN603	RJU077K20	20P B-B CONNECTOR	[M]
CN604	RJU077K20	20P B-B CONNECTOR	[M]
CN605	RJS1A5203	3P CONNECTOR	
CN605	RJS1A6223-1	23P CONNECTOR	
CN606	RJS1A6214-1	14P FFC CONNECTOR	
CN701	RJU035T016-1	16 PIN FFC CONNECTOR	
CN702	RJS1A6723-1Q	23 PIN FFC CONNECTOR	
CP1	RJT063W07T	7P CONNECTOR (CD-G)	
CP2	RJT063W07T	7P CONNECTOR (CD-G)	
CP101	RJT071H09A	9P B-B PIN	
CP102	RJT071H09A	9P B-B PIN	
CP501	RJP8G18ZA	8P CONNECTOR (2.0)	
CP502	RJT005W012	12P FJ CONNECTOR	
CP503	RJT005W012	12P FJ CONNECTOR	
CP505	RJP2G4YA	CONNECTOR	
CP601	RJT071H09A	9P B-B PIN	
CP602	RJT071H09A	9P B-B PIN	
CP603	RJT077K20	20P B-B CONNECTOR	[M]
CP604	RJT077K20	20P B-B CONNECTOR	[M]
CS101	RJS1A6805-J	HEAD SOCKET	[M]
CS102	RJS1A6805-J	HEAD SOCKET	[M]
CS951	RJU071H09M1	9P CONNECTOR	[M]
CS971	RJU071H09M1	9P CONNECTOR	[M]
		COILS & TRANSFORMERS	
L1	RLQZP1R2KT-Y	COIL	
L2	RLQZPR47KT-Y	COIL	
L3	RLQZPR47KT-Y	COIL	(GN)
L3	RLQZPR68KT-Y	AXIAL COIL	(GCS,GC,GT)
L4	ELEPKR68MA	COIL	
L5	ELEPKR68MA	COIL	
L6	ELELN822KL	RF CHOKE COIL	
L7	ELELN822KL	RF CHOKE COIL	
L8	RLQZP1R0KT-Y	AXIAL COIL	
L9	RL03B98-M	SW1 ANT COIL	[M](GCS,GC,GT)
L10	RL03B99-M	SW2 OSC COIL	[M](GCS,GC,GT)
L11	RL03B98-M	SW1 ANT COIL	[M](GCS,GC,GT)
L12	RL03B99-M	SW2 OSC COIL	[M](GCS,GC,GT)
L201	RL08C002M-T	BIAS OSC COIL	
L202	RLQZB470KT-D	RF CHOKE COIL	
L601	RLQZP3R3KT-Y	COIL	
T1	RLI2B153-M	COIL	(GCS,GC,GT)
T501	RTP1N3E008-V	POWER TRANSFORMER	[M](GCS,GN) ⚠
T501	RTP1N3E007-V	POWER TRANSFORMER	[M](GC,GT) ⚠

Ref No.	Part No.	Part Name & Description	Remarks
		COMPONENT COMBINATION	
Z1	RLA2Z002M-T	AM ANT. COIL	
Z2	RLI2Z006M-T	AM IFT	(GN)
Z101	EXBF7L355SYV	RADA RESISTOR	
Z601	RCDHC-278N	REMOCON SENSOR	
		CERAMIC FILTERS	
CF1	RLFFETWNA01L	FM CF	
CF2	RLFFETWNA01L	FM CF	
CF3	RVFSFZ450HL3	AM CF	[M](GCS,GC,GT)
		OSCILLATORS	
X1	RSXZ456KM01	19KHZ OSC	
X2	RLFDFT12DD	FM RESONATOR	
X3	SVQ49U722T-S	OSC	
X601	RSXD32K7S02	32.768HKZ X'TAL	[M]
X602	EF0EN6004T4	CERAMIC OSC	[M]
X603	RSXB375KM01M	CERAMIC OSC	
X701	RSXZ16M9M01T	CERAMIC OSC	
		EARTH TERMINAL	
E500	SNE1004-2	EARTH TERMINAL	
		RELAY	
RLY501	RSY0017-0	RELAY	[M] ⚠
		DISPLAY TUBE	
FL601	RSL0210-F	FL	
		FUSE PROTECTOR	
FP1	RSFMB40KT-L	FUSE PROTECTOR	⚠
FP2	RSFMB40KT-L	FUSE PROTECTOR	⚠
		FUSES	
F1	XBA2C31TB0	FUSE	(GC,GT) ⚠
F1	XBA2C16TB0	FUSE	(GCS,GN) ⚠
F2	XBA2C16TB0	FUSE	(GC,GT) ⚠
		FUSE CLIP	
FC1	SJT388	FUSE CLIP	

Ref No.	Part No.	Part Name & Description	Remarks
FC2	SJT388	FUSE CLIP	
FC3	SJT388	FUSE CLIP	(GC,GT)
FC4	SJT388	FUSE CLIP	(GC,GT)
		JACKS	
JK1	RJH5301	FM ANT. TERMINAL	[M]
JK2	SJS208	AM LOOP ANT TERMINAL	
JK301	RJH3209N	RCA JACK	[M]
JK500	SJSD16-1	AC INLET	(GN) ⚠
JK500	SJS9236	SOCKET	(GCS,GC,GT) ⚠
JK501	RJR0054	SP TERMINAL	
JK601	RJJ37TK04-C	HP JACK	
JK602	RJJ34MK01-C	MIC JACK	
JK603	RJJ34MK01-C	MIC JACK	
		WIRE	
W501	REX0773	8P WIRE	[M]
		CHIP JUMPERS	
RJ701	ERJ8GEY0R00A	0 1/8W	
RJ702	ERJ8GEY0R00A	0 1/8W	
RJ703	ERJ8GEY0R00A	0 1/8W	
RJ704	ERJ8GEY0R00A	0 1/8W	
RJ707	ERJ8GEY0R00A	0 1/8W	
RJ709	ERJ8GEY0R00A	0 1/8W	
RJ714	ERJ8GEY0R00A	0 1/8W	
RJ715	ERJ8GEY0R00A	0 1/8W	
RJ716	ERJ8GEY0R00A	0 1/8W	
RJ717	ERJ8GEY0R00A	0 1/8W	
RJ721	ERJ8GEY0R00A	0 1/8W	
RJ722	ERJ8GEY0R00A	0 1/8W	
RJ723	ERJ8GEY0R00A	0 1/8W	
RJ724	ERJ8GEY0R00A	0 1/8W	
RJ725	ERJ8GEY0R00A	0 1/8W	
RJ726	ERJ8GEY0R00A	0 1/8W	
RJ727	ERJ8GEY0R00A	0 1/8W	
RJ728	ERJ8GEY0R00A	0 1/8W	
RJ729	ERJ8GEY0R00A	0 1/8W	
RJ730	ERJ8GEY0R00A	0 1/8W	
		TEST JUMPERS	
TJ701	EYF8CU	TEST JUMPER	
TJ702	EYF8CU	TEST JUMPER	

■ Resistors & Capacitors

Notes :
* Capacitor values are in microfarads (μF) unless specified otherwise, P=Pico-farads (pF), F=Farads.
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
* Bracketed indications in Values & Remarks columns specify the area (Refer to the first page for area). Parts without these indications can be used for all areas.
* [M] Indicates in the values & remarks column indicates parts supplied by **MESA**

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R1	ERDS2TJ104T	100K 1/4W
R2	ERDS2TJ104T	100K 1/4W
R3	ERDS2TJ221T	220 1/4W
R4	ERDS2TJ104T	100K 1/4W
R5	ERDS2TJ564T	560K 1/4W
R6	ERDS2TJ391T	390 1/4W
R7	ERDS2TJ272T	2.7K 1/4W
R8	ERDS2TJ684T	680K 1/4W
R9	ERDS2TJ391T	390 1/4W
R10	ERDS2TJ391T	390 1/4W
R11	ERDS2TJ684T	680K 1/4W
R15	ERDS2TJ181T	180 1/4W
R16	ERDS2TJ102T	1K 1/4W (GN)
R17	ERDS2TJ331T	330 1/4W
R18	ERDS2TJ471T	470 1/4W
R19	ERDS2TJ224T	220K 1/4W (GN)
R19	ERDS2TJ474T	470K 1/4W(GCS,GC,GT)
R20	ERDS2TJ562T	5.6K 1/4W
R21	ERDS2TJ822T	8.2K 1/4W
R22	ERDS2TJ473T	47K 1/4W
R23	ERDS2TJ332T	3.3K 1/4W
R24	ERDS2TJ472T	4.7K 1/4W
R25	ERDS2TJ271T	270 1/4W
R26	ERDS2TJ471T	470 1/4W
R27	ERDS2TJ272T	2.7K 1/4W
R28	ERDS2TJ473T	47K 1/4W
R29	ERDS2TJ680T	68 1/4W
R32	ERDS2TJ272T	2.7K 1/4W
R33	ERDS2TJ272T	2.7K 1/4W
R34	ERDS2TJ103T	10K 1/4W
R35	ERDS2TJ103T	10K 1/4W
R36	ERDS2TJ474T	470K 1/4W
R37	ERDS2TJ474T	470K 1/4W
R38	ERDS2TJ272T	2.7K 1/4W
R39	ERDS2TJ272T	2.7K 1/4W
R40	ERDS2TJ391T	390 1/4W
R41	ERDS2TJ102T	1K 1/4W
R42	ERDS2TJ102T	1K 1/4W
R43	ERDS2TJ102T	1K 1/4W
R44	ERDS2TJ102T	1K 1/4W
R45	ERDS2TJ102T	1K 1/4W
R46	ERDS2TJ104T	100K 1/4W
R47	ERDS2TJ562T	5.6K 1/4W
R48	ERDS2TJ391T	390 1/4W
R49	ERDS2TJ561T	560 1/4W
R50	ERDS2TJ102T	1K 1/4W
R51	ERDS2TJ103T	10K 1/4W
R52	ERDS2TJ102T	1K 1/4W
R53	ERDS2TJ102T	1K 1/4W
R54	ERDS2TJ102T	1K 1/4W
R55	ERDS2TJ102T	1K 1/4W
R56	ERDS2TJ102T	1K 1/4W
R57	ERDS2TJ103T	10K 1/4W
R58	ERDS2TJ103T	10K 1/4W
R60	ERDS2TJ563T	56K 1/4W
R61	ERDS2TJ102T	1K 1/4W (GN)
R61	ERDS2TJ472T	4.7K 1/4W(GCS,GC,GT)
R63	ERDS2TJ102T	1K 1/4W
R64	ERDS2TJ820T	82 1/4W
R65	ERDS2TJ103T	10K 1/4W
R76	ERDS2TJ331T	330 1/4W(GCS,GC,GT)
R77	ERDS2TJ474T	470K 1/4W(GCS,GC,GT)
R80	ERDS2TJ102T	1K 1/4W(GCS,GC,GT)
R81	ERDS2TJ332T	3.3K 1/4W(GCS,GC,GT)
R82	ERDS2TJ103T	10K 1/4W(GCS,GC,GT)
R83	ERDS2TJ562T	5.6K 1/4W(GCS,GC,GT)
R84	ERDS2TJ104T	100K 1/4W(GCS,GC,GT)
R85	ERDS2TJ104T	100K 1/4W(GCS,GC,GT)
R86	ERDS2TJ104T	100K 1/4W(GCS,GC,GT)
R87	ERDS2TJ104T	100K 1/4W(GCS,GC,GT)
R88	ERDS2TJ153T	15K 1/4W(GCS,GC,GT)
R89	ERDS2TJ103T	10K 1/4W(GCS,GC,GT)
R90	ERDS2TJ153T	15K 1/4W(GCS,GC,GT)
R91	ERDS2TJ333T	33K 1/4W(GCS,GC,GT)
R92	ERDS2TJ103T	10K 1/4W(GCS,GC,GT)
R93	ERDS2TJ333T	33K 1/4W(GCS,GC,GT)
R94	ERDS2TJ153T	15K 1/4W(GCS,GC,GT)
R95	ERDS2TJ563T	56K 1/4W(GCS,GC,GT)
R96	ERDS2TJ563T	56K 1/4W(GCS,GC,GT)
R97	ERDS2TJ103T	10K 1/4W(GCS,GC,GT)
R98	ERDS2TJ274T	270K 1/4W(GCS,GC,GT)
R101	ERDS2TJ334T	330K 1/4W
R102	ERDS2TJ104T	100K 1/4W
R103	ERDS2TJ153T	15K 1/4W
R104	ERDS2TJ153T	15K 1/4W
R105	ERDS2TJ271T	270 1/4W
R106	ERDS2TJ222T	2.2K 1/4W
R107	ERDS2TJ330T	33 1/4W
R108	ERDS2TJ330T	33 1/4W
R109	ERDS2TJ432T	4.3K 1/4W
R110	ERDS2TJ432T	4.3K 1/4W
R111	ERDS2TJ222T	2.2K 1/4W
R112	ERDS2TJ222T	2.2K 1/4W
R113	ERDS2TJ122T	1.2K 1/4W
R114	ERDS2TJ122T	1.2K 1/4W
R115	ERDS2TJ474T	470K 1/4W
R116	ERDS2TJ474T	470K 1/4W
R117	ERDS2TJ274T	270K 1/4W
R118	ERDS2TJ274T	270K 1/4W
R121	ERDS2TJ333T	33K 1/4W
R122	ERDS2TJ333T	33K 1/4W
R123	ERDS2TJ103T	10K 1/4W
R124	ERDS2TJ103T	10K 1/4W
R125	ERDS2TJ102T	1K 1/4W
R126	ERDS2TJ102T	1K 1/4W
R127	ERDS2TJ821T	820 1/4W
R128	ERDS2TJ821T	820 1/4W
R129	ERDS2TJ822T	8.2K 1/4W
R130	ERDS2TJ822T	8.2K 1/4W
R131	ERDS2TJ683T	68K 1/4W
R132	ERDS2TJ335T	3.3M 1/4W
R133	ERDS2TJ332T	3.3K 1/4W
R134	ERDS2TJ474T	470K 1/4W
R137	ERDS2TJ103T	10K 1/4W
R138	ERDS2TJ103T	10K 1/4W
R139	ERDS2TJ103T	10K 1/4W
R141	ERDS2TJ682T	6.8K 1/4W
R142	ERDS2TJ682T	6.8K 1/4W
R143	ERDS2TJ222T	2.2K 1/4W
R144	ERDS2TJ222T	2.2K 1/4W
R145	ERDS2TJ103T	10K 1/4W
R146	ERDS2TJ103T	10K 1/4W
R149	ERDS2TJ272T	2.7K 1/4W
R150	ERDS2TJ272T	2.7K 1/4W
R151	ERDS2TJ105T	1M 1/4W
R152	ERDS2TJ105T	1M 1/4W
R153	ERDS2TJ102T	1K 1/4W
R154	ERDS2TJ102T	1K 1/4W
R155	ERDS2TJ681T	680 1/4W
R156	ERDS2TJ681T	680 1/4W
R158	ERDS2TJ221T	220 1/4W
R159	ERDS2TJ222T	2.2K 1/4W
R160	ERDS2TJ222T	2.2K 1/4W
R161	ERDS2TJ472T	4.7K 1/4W
R162	ERDS2TJ472T	4.7K 1/4W
R163	ERDS2TJ433T	43K 1/4W
R165	ERDS2TJ563T	56K 1/4W
R166	ERDS2TJ104T	100K 1/4W
R167	ERDS2TJ470T	47 1/4W
R170	ERDS2TJ102T	1K 1/4W
R172	ERDS2TJ331T	330 1/4W
R173	ERDS2TJ103T	10K 1/4W
R174	ERDS2TJ103T	10K 1/4W
R176	ERDS2TJ822T	8.2K 1/4W
R177	ERDS2TJ472T	4.7K 1/4W
R178	ERDS2TJ1R2T	1.2 1/4W
R179	ERDS2TJ472T	4.7K 1/4W
R180	ERDS2TJ472T	4.7K 1/4W
R181	ERDS2TJ332T	3.3K 1/4W
R182	ERDS2TJ1R0T	1 1/4W
R183	ERDS2TJ104T	100K 1/4W
R184	ERDS2TJ104T	100K 1/4W
R185	ERDS2TJ104T	100K 1/4W
R186	ERDS2TJ102T	1K 1/4W
R188	ERDS2TJ102T	1K 1/4W
R189	ERDS2TJ472T	4.7K 1/4W
R190	ERDS2TJ104T	100K 1/4W
R191	ERDS2TJ563T	56K 1/4W
R192	ERDS2TJ470T	47 1/4W
R193	ERDS2TJ104T	100K 1/4W
R194	ERDS2TJ104T	100K 1/4W
R195	ERDS2TJ104T	100K 1/4W
R206	ERDS2TJ221T	220 1/4W
R208	ERDS2TJ123T	12K 1/4W
R209	ERDS2TJ123T	12K 1/4W
R210	ERDS2TJ272T	2.7K 1/4W
R211	ERDS2TJ334T	330K 1/4W
R212	ERDS2TJ123T	12K 1/4W
R213	ERDS2TJ152T	1.5K 1/4W
R215	ERDS2TJ222T	2.2K 1/4W

Ref. No.	Part No.	Values & Remarks
R216	ERDS2TJ222T	2.2K 1/4W
R220	ERDS2TJ472T	4.7K 1/4W
R221	ERDS2TJ2R7T	2.7 1/4W
R225	ERDS2TJ2R7T	2.7 1/4W
R226	ERDS2TJ102T	1K 1/4W
R227	ERDS2TJ102T	1K 1/4W
R228	ERDS2TJ472T	4.7K 1/4W
R229	ERDS2TJ103T	10K 1/4W
R230	ERDS2TJ472T	4.7K 1/4W
R231	ERDS2TJ102T	1K 1/4W
R232	ERDS2TJ102T	1K 1/4W
R233	ERDS2TJ222T	2.2K 1/4W
R234	ERDS2TJ472T	4.7K 1/4W
R235	ERDS2TJ472T	4.7K 1/4W
R236	ERDS2TJ472T	4.7K 1/4W
R301	ERDS2TJ223T	22K 1/4W
R302	ERDS2TJ223T	22K 1/4W
R303	ERDS2TJ822T	8.2K 1/4W
R304	ERDS2TJ822T	8.2K 1/4W
R305	ERDS2TJ222T	2.2K 1/4W
R306	ERDS2TJ222T	2.2K 1/4W
R307	ERDS2TJ332T	3.3K 1/4W
R308	ERDS2TJ332T	3.3K 1/4W
R309	ERDS2TJ222T	2.2K 1/4W
R310	ERDS2TJ222T	2.2K 1/4W
R311	ERDS2TJ392T	3.9K 1/4W
R312	ERDS2TJ392T	3.9K 1/4W
R313	ERDS2TJ562T	5.6K 1/4W
R314	ERDS2TJ562T	5.6K 1/4W
R315	ERDS2TJ332T	3.3K 1/4W
R316	ERDS2TJ332T	3.3K 1/4W
R317	ERDS2TJ104T	100K 1/4W
R318	ERDS2TJ104T	100K 1/4W
R319	ERDS2TJ103T	10K 1/4W
R320	ERDS2TJ474T	470K 1/4W
R321	ERDS2TJ332T	3.3K 1/4W
R322	ERDS2TJ332T	3.3K 1/4W
R323	ERDS2TJ102T	1K 1/4W
R324	ERDS2TJ102T	1K 1/4W
R325	ERDS2TJ563T	56K 1/4W
R326	ERDS2TJ563T	56K 1/4W
R327	ERDS2TJ472T	4.7K 1/4W
R328	ERDS2TJ472T	4.7K 1/4W
R329	ERDS2TJ681T	680 1/4W
R330	ERDS2TJ681T	680 1/4W
R331	ERDS2TJ152T	1.5K 1/4W
R332	ERDS2TJ472T	4.7K 1/4W
R333	ERDS2TJ122T	1.2K 1/4W
R334	ERDS2TJ122T	1.2K 1/4W

Ref. No.	Part No.	Values & Remarks
R335	ERDS2TJ563T	56K 1/4W
R336	ERDS2TJ563T	56K 1/4W
R337	ERDS2TJ272T	2.7K 1/4W
R338	ERDS2TJ272T	2.7K 1/4W
R339	ERDS1FVJ820T	82 1/2W ⚠
R340	ERDS1FVJ820T	82 1/2W ⚠
R341	ERDS2TJ472T	4.7K 1/4W
R342	ERDS2TJ472T	4.7K 1/4W
R343	ERDS2TJ182T	1.8K 1/4W
R344	ERDS2TJ182T	1.8K 1/4W
R345	ERDS2TJ152T	1.5K 1/4W
R346	ERDS2TJ152T	1.5K 1/4W
R347	ERDS2TJ102T	1K 1/4W
R348	ERDS2TJ102T	1K 1/4W
R349	ERDS2TJ104T	100K 1/4W
R350	ERDS2TJ104T	100K 1/4W
R351	ERDS2TJ473T	47K 1/4W
R352	ERDS2TJ474T	470K 1/4W
R353	ERDS2TJ105T	1M 1/4W
R354	ERDS2TJ153T	15K 1/4W
R355	ERDS2TJ182T	1.8K 1/4W
R356	ERDS2TJ334T	330K 1/4W
R357	ERDS2TJ105T	1M 1/4W
R358	ERDS2TJ222T	2.2K 1/4W
R359	ERDS2TJ682T	6.8K 1/4W
R360	ERDS2TJ103T	10K 1/4W
R383	ERDS2TJ224T	220K 1/4W
R384	ERDS2TJ224T	220K 1/4W
R386	ERDS2TJ102T	1K 1/4W
R387	ERDS2TJ102T	1K 1/4W
R391	ERDS2TJ102T	1K 1/4W
R392	ERDS2TJ392T	3.9K 1/4W
R393	ERDS2TJ102T	1K 1/4W
R394	ERDS2TJ153T	15K 1/4W
R397	ERDS2TJ562T	5.6K 1/4W
R399	ERDS2TJ472T	4.7K 1/4W
R401	ERDS2TJ103T	10K 1/4W
R402	ERDS2TJ333T	33K 1/4W
R403	ERDS2TJ223T	22K 1/4W
R404	ERDS2TJ8R2T	8.2 1/4W
R406	ERDS2TJ8R2T	8.2 1/4W
R407	ERDS2TJ331T	330 1/4W
R408	ERDS2TJ151T	150 1/4W
R409	ERDS2TJ221T	220 1/4W
R410	ERDS1FVJ390T	39 1/2W ⚠
R411	ERDS1FVJ390T	39 1/2W ⚠
R412	ERDS1FVJ390T	39 1/2W ⚠
R413	ERDS2TJ102T	1K 1/4W
R414	ERDS2TJ151T	150 1/4W

Ref. No.	Part No.	Values & Remarks
R415	ERDS2TJ102T	1K 1/4W
R416	ERDS2TJ183T	18K 1/4W
R417	ERDS2TJ183T	18K 1/4W
R418	ERDS1FVJ181T	180 1/2W ⚠
R419	ERDS2TJ682T	6.8K 1/4W
R420	ERDS1FVJ181T	180 1/2W ⚠
R421	ERDS2TJ333T	33K 1/4W
R422	ERDS2TJ331T	330 1/4W
R423	ERDS2TJ223T	22K 1/4W
R424	ERDS2TJ331T	330 1/4W
R427	ERDS2TJ103T	10K 1/4W
R431	ERDS2TJ391T	390 1/4W
R432	ERDS2TJ391T	390 1/4W
R433	ERDS2TJ562T	5.6K 1/4W
R434	ERDS2TJ562T	5.6K 1/4W
R435	ERDS2TJ332T	3.3K 1/4W
R436	ERDS2TJ471T	470 1/4W
R437	ERDS2TJ224T	220K 1/4W
R438	ERDS2TJ224T	220K 1/4W
R452	ERDS2TJ471T	470 1/4W
R457	ERDS2TJ1R0T	1 1/4W
R458	ERDS2TJ1R0T	1 1/4W
R466	ERDS2TJ1R0T	1 1/4W
R491	ERDS2TJ222T	2.2K 1/4W
R492	ERDS2TJ222T	2.2K 1/4W
R493	ERDS2TJ474T	470K 1/4W
R494	ERDS2TJ474T	470K 1/4W
R495	ERDS2TJ474T	470K 1/4W
R501	ERDS2TJ102T	1K 1/4W
R502	ERDS2TJ102T	1K 1/4W
R503	ERDS2TJ683T	68K 1/4W
R504	ERDS2TJ683T	68K 1/4W
R505	ERDS2TJ682T	6.8K 1/4W
R506	ERDS2TJ682T	6.8K 1/4W
R507	ERDS2TJ683T	68K 1/4W
R508	ERDS2TJ683T	68K 1/4W
R509	ERDS1FVJ100T	10 1/2W ⚠
R510	ERDS1FVJ100T	10 1/2W ⚠
R511	ERDS2TJ823T	82K 1/4W
R512	ERDS2TJ124T	120K 1/4W
R513	ERDS2TJ334T	330K 1/4W
R514	ERDS2TJ563T	56K 1/4W
R515	ERDS2TJ103T	10K 1/4W
R516	ERD25FVJ470T	47 1/4W (GC,GT)
R516	ERD2FCVG470T	47 1/4W (GCSGN)
R517	ERDS2TJ563T	56K 1/4W
R518	ERDS1FVJ390T	39 1/2W ⚠
R519	ERDS1FVJ390T	39 1/2W ⚠
R521	ERDS1FVJ222T	2.2K 1/2W ⚠

Ref. No.	Part No.	Values & Remarks
R522	ERDS1FVJ2R2T	2.2 1/2W ⚠
R525	ERDS1FVJ220T	22 1/2W ⚠
R527	ERDS2TJ472T	4.7K 1/4W
R528	ERDS2TJ151T	150 1/4W
R529	ERDS1FVJ2R2T	2.2 1/2W ⚠
R530	ERDS2TJ681T	680 1/4W
R531	ERDS2TJ151T	150 1/4W
R532	ERDS2TJ222T	2.2K 1/4W
R533	ERDS2TJ472T	4.7K 1/4W
R534	ERDS1FVJ2R2T	2.2 1/2W ⚠
R535	ERDS1FVJ1R0T	1 1/2W ⚠
R537	ERDS2TJ151T	150 1/4W
R538	ERDS1FVJ1R0T	1 1/2W ⚠
R539	ERDS1FVJ390T	39 1/2W ⚠
R541	ERDS1FVJ220T	22 1/2W ⚠
R542	ERDS1FVJ220T	22 1/2W ⚠
R544	ERDS2TJ151T	150 1/4W
R545	ERDS2TJ1R0T	1 1/4W
R546	ERDS2TJ1R0T	1 1/4W
R547	ERDS2TJ1R0T	1 1/4W
R553	ERDS1FVJ2R2T	2.2 1/2W ⚠
R554	ERDS1FVJ2R2T	2.2 1/2W ⚠
R555	ERDS1FVJ2R2T	2.2 1/2W ⚠
R556	ERDS1FVJ2R2T	2.2 1/2W ⚠
R557	ERDS1FVJ2R2T	2.2 1/2W ⚠
R561	ERDS2TJ103T	10K 1/4W
R562	ERDS2TJ103T	10K 1/4W
R563	ERDS2TJ224T	220K 1/4W
R564	ERDS2TJ224T	220K 1/4W
R565	ERDS2TJ183T	18K 1/4W
R566	ERDS2TJ104T	100K 1/4W
R567	ERDS2TJ103T	10K 1/4W
R568	ERDS2TJ152T	1.5K 1/4W
R569	ERDS2TJ273T	27K 1/4W
R570	ERDS2TJ103T	10K 1/4W
R571	ERDS2TJ103T	10K 1/4W
R572	ERDS2TJ335T	3.3M 1/4W
R573	ERDS2TJ104T	100K 1/4W
R574	ERDS2TJ101T	100 1/4W
R575	ERDS2TJ561T	560 1/4W
R577	ERDS1FVJ100T	10 1/2W ⚠
R578	ERDS2TJ124T	120K 1/4W
R579	ERDS1FVJ4R7T	4.7 1/2W ⚠
R580	ERDS1FVJ4R7T	4.7 1/2W ⚠
R581	ERDS2TJ101T	100 1/4W
R582	ERDS2TJ223T	22K 1/4W
R583	ERDS2TJ473T	47K 1/4W
R584	ERDS2TJ472T	4.7K 1/4W
R601	ERDS2TJ103T	10K 1/4W

Ref. No.	Part No.	Values & Remarks
R602	ERDS2TJ222T	2.2K 1/4W
R603	ERDS2TJ102T	1K 1/4W
R604	ERDS2TJ561T	560 1/4W
R605	ERDS2TJ104T	100K 1/4W
R606	ERDS2TJ104T	100K 1/4W
R607	ERDS2TJ103T	10K 1/4W
R608	ERDS2TJ103T	10K 1/4W
H611	ERDS2TJ473T	47K 1/4W
R612	ERDS2TJ103T	10K 1/4W
R613	ERDS2TJ102T	1K 1/4W
R614	ERDS2TJ102T	1K 1/4W
R616	ERDS2TJ103T	10K 1/4W
R617	ERDS2TJ106T	10M 1/4W
R618	ERDS2TJ334T	330K 1/4W
R619	ERDS2TJ681T	680 1/4W
R620	ERDS2TJ472T	4.7K 1/4W
R621	ERDS2TJ472T	4.7K 1/4W
R622	ERDS2TJ103T	10K 1/4W
R623	ERDS2TJ103T	10K 1/4W
R624	ERDS2TJ103T	10K 1/4W
R625	ERDS2TJ101T	100 1/4W
R626	ERDS2TJ101T	100 1/4W
R627	ERDS2TJ104T	100K 1/4W
R628	ERDS2TJ104T	100K 1/4W
R629	ERDS2TJ104T	100K 1/4W
R630	ERDS2TJ104T	100K 1/4W
R631	ERDS2TJ104T	100K 1/4W
R632	ERDS2TJ104T	100K 1/4W
R633	ERDS2TJ104T	100K 1/4W
R634	ERDS2TJ104T	100K 1/4W
R635	ERDS2TJ223T	22K 1/4W
R636	ERDS2TJ331T	330 1/4W
R638	ERDS2TJ103T	10K 1/4W
R639	ERDS2TJ103T	10K 1/4W
R640	ERDS2TJ103T	10K 1/4W
R641	ERDS2TJ103T	10K 1/4W
R642	ERDS2TJ473T	47K 1/4W
R643	ERDS2TJ473T	47K 1/4W
R644	ERDS2TJ101T	100 1/4W
R645	ERDS2TJ101T	100 1/4W
R646	ERDS2TJ101T	100 1/4W
R647	ERDS2TJ101T	100 1/4W
R648	ERDS2TJ471T	470 1/4W
R649	ERDS2TJ153T	15K 1/4W
R650	ERDS2TJ153T	15K 1/4W
R651	ERDS2TJ103T	10K 1/4W
R652	ERDS2TJ103T	10K 1/4W
R653	ERDS2TJ153T	15K 1/4W
R654	ERDS2TJ154T	150K 1/4W

Ref. No.	Part No.	Values & Remarks
R655	ERDS2TJ330T	33 1/4W
R656	ERDS2TJ151T	150 1/4W
R657	ERDS2TJ273T	27K 1/4W
R658	ERDS2TJ223T	22K 1/4W
R660	ERDS2TJ822T	8.2K 1/4W
R661	ERDS2TJ105T	1M 1/4W
R662	ERDS2TJ102T	1K 1/4W
R663	ERDS2TJ472T	4.7K 1/4W
R664	ERDS2TJ472T	4.7K 1/4W
R665	ERDS2TJ101T	100 1/4W
R666	ERDS2TJ222T	2.2K 1/4W
R667	ERDS2TJ472T	4.7K 1/4W
R668	ERDS2TJ105T	1M 1/4W
R669	ERDS2TJ821T	820 1/4W
R670	ERDS2TJ222T	2.2K 1/4W
R671	ERDS2TJ472T	4.7K 1/4W
R672	ERDS2TJ101T	100 1/4W
R673	ERDS2TJ472T	4.7K 1/4W
R674	ERDS2TJ474T	470K 1/4W
R675	ERDS2TJ472T	4.7K 1/4W
R676	ERDS2TJ471T	470 1/4W
R677	ERDS2TJ104T	100K 1/4W
R681	ERDS2TJ272T	2.7K 1/4W
R682	ERDS2TJ272T	2.7K 1/4W
R683	ERDS2TJ471T	470 1/4W
R684	ERDS2TJ471T	470 1/4W
R685	ERDS2TJ223T	22K 1/4W
R686	ERDS2TJ223T	22K 1/4W
R687	ERDS2TJ103T	10K 1/4W
R690	ERDS2TJ271T	270 1/4W
R691	ERDS2TJ221T	220 1/4W
R694	ERDS2TJ182T	1.8K 1/4W
R695	ERDS2TJ222T	2.2K 1/4W
R696	ERDS2TJ272T	2.7K 1/4W
R697	ERDS2TJ472T	4.7K 1/4W
R698	ERDS2TJ682T	6.8K 1/4W
R699	ERDS2TJ473T	47K 1/4W
R700	ERDS2TJ102T	1K 1/4W
R701	ERDS2TJ102T	1K 1/4W
R701	ERJ6GEYJ4R7V	4.7 1/10W
R702	ERDS2TJ122T	1.2K 1/4W
R703	ERDS2TJ182T	1.8K 1/4W
R703	ERJ6GEYJ823	82K 1/10W
R704	ERDS2TJ222T	2.2K 1/4W
R704	ERJ6GEYJ102V	1K 1/10W
R705	ERDS2TJ272T	2.7K 1/4W
R705	ERJ6GEYJ103V	10K 1/10W
R706	ERDS2TJ472T	4.7K 1/4W
R706	ERJ6GEYJ102V	1K 1/10W

Ref. No.	Part No.	Values & Remarks
R707	ERDS2TJ682T	6.8K 1/4W
R707	ERJ6GEYJ474V	470K 1/10W
R708	ERDS2TJ103T	10K 1/4W
R708	ERJ6GEYJ154V	150K 1/10W
R709	ERDS2TJ223T	22K 1/4W
R709	ERJ6GEYJ683V	68K 1/10W
R711	ERDS2TJ102T	1K 1/4W
R711	ERJ6GEYJ154V	150K 1/10W
R712	ERDS2TJ102T	1K 1/4W
R712	ERJ6GEYJ221V	220 1/10W
R713	ERDS2TJ122T	1.2K 1/4W
R714	ERDS2TJ182T	1.8K 1/4W
R715	ERDS2TJ222T	2.2K 1/4W
R716	ERDS2TJ272T	2.7K 1/4W
R717	ERDS2TJ472T	4.7K 1/4W
R717	ERJ6GEYJ102V	1K 1/10W
R718	ERDS2TJ682T	6.8K 1/4W
R718	ERJ6GEYJ102V	1K 1/10W
R719	ERDS2TJ103T	10K 1/4W
R719	ERJ6GEYJ102V	1K 1/10W
R720	ERDS2TJ223T	22K 1/4W
R720	ERJ6GEYJ102V	1K 1/10W
R721	ERDS2TJ683T	68K 1/4W
R721	ERJ6GEYJ101V	100 1/10W
R722	ERDS2TJ102T	1K 1/4W
R722	ERJ6GEYJ563V	56K 1/10W
R723	ERDS2TJ102T	1K 1/4W
R723	ERJ6GEYJ182V	1.8K 1/10W
R724	ERDS2TJ122T	1.2K 1/4W
R724	ERJ6GEYJ333V	33K 1/10W
R725	ERDS2TJ182T	1.8K 1/4W
R725	ERJ6GEYJ472V	4.7K 1/10W
R726	ERDS2TJ222T	2.2K 1/4W
R726	ERJ6GEYJ473V	47K 1/10W
R727	ERDS2TJ272T	2.7K 1/4W
R727	ERJ6GEYJ822V	8.2K 1/10W
R728	ERDS2TJ472T	4.7K 1/4W
R728	ERJ6GEYJ103V	10K 1/10W
R729	ERDS2TJ682T	6.8K 1/4W
R730	ERDS2TJ103T	10K 1/4W
R731	ERDS2TJ223T	22K 1/4W
R731	ERJ6GEYJ822V	8.2K 1/10W
R732	ERDS2TJ683T	68K 1/4W
R733	ERDS2TJ821T	820 1/4W
R734	ERDS2TJ821T	820 1/4W
R734	ERJ6GEYJ101V	100 1/10W
R735	ERJ6GEYJ101V	100 1/10W
R736	ERJ6GEYJ101V	100 1/10W
R737	ERDS2TJ821T	820 1/4W

Ref. No.	Part No.	Values & Remarks
R738	ERDS2TJ431T	430 1/4W
R738	ERJ6GEYJ223V	22K 1/10W
R739	ERDS2TJ431T	430 1/4W
R740	ERDS2TJ221T	220 1/4W
R741	ERDS2TJ431T	430 1/4W
R741	ERJ6GEYJ562V	5.6K 1/10W
R742	ERDS2TJ221T	220 1/4W
R742	ERJ6GEYJ562V	5.6K 1/10W
R743	ERDS2TJ431T	430 1/4W
R743	ERJ6GEYJ562V	5.6K 1/10W
R744	ERDS2TJ104T	100K 1/4W
R744	ERJ6GEYJ103V	10K 1/10W
R745	ERDS2TJ472T	4.7K 1/4W
R745	ERJ6GEYJ155V	1.5M 1/10W
R746	ERDS2TJ472T	4.7K 1/4W
R747	ERDS2TJ681T	680 1/4W
R748	ERDS2TJ681T	680 1/4W
R748	ERJ6GEYJ182V	1.8K 1/10W
R749	ERDS2TJ681T	680 1/4W
R749	ERJ6GEYJ682V	6.8K 1/10W
R750	ERDS2TJ681T	680 1/4W
R750	ERJ6GEYJ473V	47K 1/10W
R751	ERDS2TJ681T	680 1/4W
R751	ERJ6GEYJ473V	47K 1/10W
R752	ERDS2TJ681T	680 1/4W
R752	ERJ8GEYJ220V	22 1/8W
R753	ERDS2TJ681T	680 1/4W
R754	ERDS2TJ681T	680 1/4W
R755	ERDS2TJ681T	680 1/4W
R756	ERDS2TJ681T	680 1/4W
R757	ERDS2TJ681T	680 1/4W
R758	ERDS2TJ681T	680 1/4W
R759	ERDS2TJ820T	82 1/4W
R760	ERDS2TJ820T	82 1/4W
R761	ERDS2TJ820T	82 1/4W
R762	ERDS2TJ820T	82 1/4W
R763	ERDS2TJ820T	82 1/4W
R764	ERDS2TJ820T	82 1/4W
R765	ERDS2TJ820T	82 1/4W
R766	ERDS2TJ820T	82 1/4W
R767	ERDS2TJ223T	22K 1/4W
R768	ERDS2TJ123T	12K 1/4W
R769	ERDS2TJ223T	22K 1/4W
R770	ERDS2TJ123T	12K 1/4W
R770	ERJ6GEYJ155V	1.5M 1/10W
R771	ERDS2TJ472T	4.7K 1/4W
R771	ERJ6GEYJ155V	1.5M 1/10W
R772	ERJ6GEYJ273V	27K 1/10W
R773	ERDS2TJ104T	100K 1/4W

Ref. No.	Part No.	Values & Remarks
R774	ERDS2TJ104T	100K 1/4W
R775	ERDS2TJ104T	100K 1/4W
R780	ERDS2TJ223T	22K 1/4W
R784	ERDS2TJ333T	33K 1/4W
R785	ERDS2TJ332T	3.3K 1/4W
R786	ERDS2TJ105T	1M 1/4W
R787	ERDS2TJ682T	6.8K 1/4W
R788	ERDS2TJ102T	1K 1/4W
R789	ERDS2TJ102T	1K 1/4W
R790	ERDS2TJ122T	1.2K 1/4W
R796	ERDS2TJ102T	1K 1/4W
R797	ERDS2TJ102T	1K 1/4W
R798	ERDS2TJ102T	1K 1/4W
R799	ERDS2TJ102T	1K 1/4W
R800	ERDS2TJ561T	560 1/4W
R952	ERDS2TJ821T	820 1/4W
R953	ERDS2TJ393T	39K 1/4W
R972	ERDS2TJ821T	820 1/4W
R973	ERDS2TJ393T	39K 1/4W
		CAPACITORS
C1	ECBT1H5R6KC5	5.6P 50V
C1	ECA1AKF820E	82 10V
C2	RCBS1H102KBY	1000P 50V
C3	ECBT1H2R2KC5	2.2P 50V
C4	ECBT1H181KB5	180P 50V
C5	ECBT1H5R6KC5	5.6P 50V
C6	ECBT1H3R3KC5	3.3P 50V
C7	ECBT1H4R7KC5	4.7P 50V
C8	ECBT1H3R3KC5	3.3P 50V
C9	ECBT1H2R2KC5	2.2P 50V
C10	ECBT1H180JC5	18P 50V
C11	RCBS1H102KBY	1000P 50V
C15	ECBT1C103MS5	0.01 16V
C16	ECEA1CU220B	22 16V
C17	ECBT1C103MS5	0.01 16V
C18	ECBT1H102KB5	1000P 50V
C19	ECBT1C103MS5	0.01 16V
C20	ECEA1HKA3R3B	3.3 50V
C21	ECEA0JU101B	100 6.3V (GN)
C21	ECEA0JU331B	330 6.3V(GCS,GC,GT)
C22	ECBT1C103MS5	0.01 16V (GN)
C22	ECBT1H473ZF5	0.047 50V(GCS,GC,GT)
C23	ECEA1CU220B	22 16V
C24	ECBT1H473ZF5	0.047 50V
C25	ECEA1HKA4R7B	4.7 50V
C26	ECBT1C822MS5	8200P 16V
C27	ECQP1821JZT	820P 100V [M]

Ref. No.	Part No.	Values & Remarks
C28	ECEA1HKA010B	1 50V
C29	ECFR1C103KR	0.01 16V
C30	ECFR1C103KR	0.01 16V
C31	ECBT1H150JC5	15P 50V (GN)
C31	ECBT1H8R2KC5	8.2P 50V(GCS,GC,GT)
C32	ECBT1C103MS5	0.01 16V (GN)
C32	ECBT1H470J5	47P 50V(GCS,GC,GT)
C33	ECEA1HKA2R2B	2.2 50V
C34	ECEA1HKA010B	1 50V
C35	ECEA1HKA010B	1 50V
C36	ECEA1HKA010B	1 50V
C37	ECEA1HKA010B	1 50V
C38	ECBT1C822MS5	8200P 16V
C39	ECBT1C822MS5	8200P 16V
C40	ECBT1H561KB5	560P 50V
C41	ECBT1H561KB5	560P 50V
C42	ECBT1C562MR5	5600P 16V
C43	ECBT1C562MR5	5600P 16V
C44	ECEA1CU101B	100 16V
C45	ECEA1HKA010B	1 50V
C46	ECEA1HKA010B	1 50V
C47	ECBT1H473ZF5	0.047 50V
C48	ECBT1H8R2KC5	8.2P 50V
C49	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C51	ECBT1C103MS5	0.01 16V
C52	ECEA25M4R7RB	4.7 25V
C53	ECBT1C103MS5	0.01 16V
C54	ECBT1H180JC5	18P 50V
C55	ECBT1H150JC5	15P 50V
C56	ECBT1H102KB5	1000P 50V
C57	ECEA0JU101B	100 6.3V
C59	ECBT1H330J5	33P 50V
C60	ECBT1H102KB5	1000P 50V
C61	ECBT1H331KB5	330P 50V
C62	ECEA1CU220B	22 16V
C63	ECBT1C103MS5	0.01 16V
C64	ECBT1C103MS5	0.01 16V
C65	ECBT1H102KB5	1000P 50V
C66	ECBT1H102KB5	1000P 50V
C67	ECBT1H102KB5	1000P 50V
C68	ECBT1H102KB5	1000P 50V(GCS,GC,GT)
C71	ECBT1H331KB5	330P 50V
C72	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C73	ECEA1HKA010B	1 50V(GCS,GC,GT)
C74	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C75	ECBT1H180JC5	18P 50V(GCS,GC,GT)
C76	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C77	ECQP2A222JZT	2200P 100V(GCS,GC,GT)
C78	ECBT1H2R2KC5	2.2P 50V(GCS,GC,GT)

Ref. No.	Part No.	Values & Remarks
C79	ECBT1H2R2KC5	2.2P 50V(GCS,GC,GT)
C80	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C81	ECBT1H220JC5	22P 50V(GCS,GC,GT)
C82	ECBT1H150JC5	15P 50V(GCS,GC,GT)
C83	ECQP2A222JZT	2200P 100V(GCS,GC,GT)
C84	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C85	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C86	ECBT1H220JC5	22P 50V(GCS,GC,GT)
C87	ECBT1H100JC5	10P 50V(GCS,GC,GT)
C88	ECBT1C103MS5	0.01 16V(GCS,GC,GT)
C101	ECBT1H102KB5	1000P 50V
C102	ECBT1H102KB5	1000P 50V
C103	ECBT1H681KB5	680P 50V
C104	ECFR1C223MR	0.022 16V
C105	ECBT1H681KB5	680P 50V
C106	ECBT1H681KB5	680P 50V
C108	ECEA1CKA330B	33 16V
C109	ECEA1CKA101B	100 16V
C111	ECBT1H561KB5	560P 50V
C112	ECBT1H561KB5	560P 50V
C113	ECEA0JKA221B	220 6.3V
C114	ECEA0JKA221B	220 6.3V
C115	ECFR1C333JR	0.033 16V
C116	ECFR1C333JR	0.033 16V
C117	ECEA1HKA010B	1 50V
C118	ECEA1HKA010B	1 50V
C119	ECEA1HKA4R7B	4.7 50V
C120	ECEA1HKA4R7B	4.7 50V
C121	ECEA1HKA010B	1 50V
C122	ECEA1HKA010B	1 50V
C123	ECBT1H102KB5	1000P 50V
C124	ECBT1H102KB5	1000P 50V
C125	ECFR1C473MR	0.047 16V
C126	ECFR1C473MR	0.047 16V
C127	ECBT1C103MS5	0.01 16V
C128	ECBT1C103MS5	0.01 16V
C129	ECBT1H821KB5	820P 50V
C130	ECBT1H821KB5	820P 50V
C131	ECBT1H821KB5	820P 50V
C132	ECBT1H821KB5	820P 50V
C133	ECEA1HKA4R7B	4.7 50V
C134	ECEA1HKA4R7B	4.7 50V
C135	ECBT1H102KB5	1000P 50V
C136	ECBT1H102KB5	1000P 50V
C137	ECFR1C183KR	0.018 16V
C138	ECFR1C183KR	0.018 16V
C139	ECEA1HKA2R2B	2.2 50V
C140	ECEA1CKA100B	10 16V
C141	ECEA1HKA0R1B	0.1 50V

Ref. No.	Part No.	Values & Remarks
C142	ECFR1C223MR	0.022 16V
C143	ECEA1HKA4R7B	4.7 50V
C144	ECEA1HKA4R7B	4.7 50V
C145	ECEA1CKA100B	10 16V
C146	ECEA1CKA100B	10 16V
C147	ECBT1C152KR5	1500P 16V
C148	ECBT1C152KR5	1500P 16V
C150	ECEA1AKA470B	47 10V
C151	ECEA1HKA010B	1 50V
C152	ECEA1HKA010B	1 50V
C153	ECBT1H102KB5	1000P 50V
C154	ECBT1H102KB5	1000P 50V
C155	ECEA1CKA100B	10 16V
C156	ECEA1CKA100B	10 16V
C161	ECEA1CKA101B	100 16V
C162	ECEA1CU471B	470 16V
C163	ECEA1HKA010B	1 50V
C164	ECEA1HKA010B	1 50V
C165	ECEA1CKA100B	10 16V
C166	ECEA1CKA100B	10 16V
C167	ECEA1HKAR68B	0.68 50V
C168	ECEA1HKAR68B	0.68 50V
C169	ECEA1HKA4R7B	4.7 50V
C170	ECEA1HKA4R7B	4.7 50V
C171	ECEA1CKA100B	10 16V
C173	ECBT1C103MS5	0.01 16V
C174	ECEA1HKA4R7B	4.7 50V
C175	ECEA1VU221B	220 10V
C176	ECQV1H473JZ3	0.047 50V
C177	ECBT1H102KB5	1000P 50V
C178	ECBT1H102KB5	1000P 50V
C179	ECBT1C103MS5	0.01 16V
C180	ECBT1C103MS5	0.01 16V
C181	ECBT1C103MS5	0.01 16V
C182	ECEA1HKA4R7B	4.7 50V
C183	ECQV1H474JZ3	0.47 50V
C184	ECQP1152JZ	1500P 100V
C185	ECQP2A472JZT	4700P 100V
C186	ECEA1AKA470B	47 10V
C187	ECBT1H101KB5	100P 50V
C188	ECBT1H101KB5	100P 50V
C193	ECBT1H102KB5	1000P 50V
C194	ECBT1H102KB5	1000P 50V
C201	ECEA1CKA101B	100 16V
C202	ECBT1H104ZF5	0.1 50V
C203	ECBT1H331KB5	330P 50V
C204	ECBT1H331KB5	330P 50V
C205	ECBT1C222KR5	2200P 16V
C206	ECBT1C222KR5	2200P 16V

Ref. No.	Part No.	Values & Remarks
C301	ECBT1E103ZF5	0.01 25V
C302	ECBT1E103ZF5	0.01 25V
C304	ECBT0J223NS5	0.022 6.3V
C305	ECBT1E103ZF5	0.01 25V
C306	ECBT1E103ZF5	0.01 25V
C307	ECBT1H101KB5	100P 50V
C308	ECBT1H101KB5	100P 50V
C309	ECBT1H104ZF5	0.1 50V
C310	ECBT1H104ZF5	0.1 50V
C311	ECBT1H470J5	47P 50V
C312	ECBT1H470J5	47P 50V
C313	ECBT1H104ZF5	0.1 50V
C314	ECFR1C473KR	0.047 16V
C315	ECBT1E103ZF5	0.01 25V
C316	ECBT0J223NS5	0.022 6.3V
C317	ECEA1HKA3R3B	3.3 50V
C318	ECEA1HKA3R3B	3.3 50V
C320	ECBT0J223NS5	0.022 6.3V
C321	ECEA1HKA0R1B	0.1 50V
C322	ECEA1HKA0R1B	0.1 50V
C323	ECEA1HKAR22B	0.22 50V
C324	ECEA1HKAR22B	0.22 50V
C325	ECFR1C153MR	0.015 16V
C326	ECFR1C153MR	0.015 16V
C327	ECFR1C153MR	0.015 16V
C328	ECFR1C153MR	0.015 16V
C329	ECBT1C222MR5	2200P 16V
C330	ECBT1C222MR5	2200P 16V
C331	ECEA1HKA010B	1 50V
C332	ECEA1HKA010B	1 50V
C333	ECEA1HKA0R1B	0.1 50V
C334	ECEA1HKA0R1B	0.1 50V
C335	ECEA1HKA0R1B	0.1 50V
C336	ECEA1HKA0R1B	0.1 50V
C337	ECEA1HKA3R3B	3.3 50V
C338	ECEA1HKA3R3B	3.3 50V
C339	ECBT1E103ZF5	0.01 25V
C340	ECBT1E103ZF5	0.01 25V
C341	ECEA1CKA220B	22 16V
C342	ECEA1HKA4R7B	4.7 50V
C343	ECEA1HKAR47B	0.47 50V
C344	ECEA1HKAR47B	0.47 50V
C347	ECBT1H560J5	56P 50V
C348	ECBT1H560J5	56P 50V
C351	ECBT1E103ZF5	0.01 25V
C352	ECBT1E103ZF5	0.01 25V
C353	ECEA1HKA3R3B	3.3 50V
C354	ECEA1HKA3R3B	3.3 50V
C355	ECEA1HKAR33B	0.33 50V
C356	ECEA1HKAR33B	0.33 50V
C357	ECEA0JKA470B	47 6.3V
C359	ECEA1HU010B	1 50V
C360	ECEA0JKA470B	47 6.3V
C361	ECEA1HKA010B	1 50V
C362	ECBT1H101KB5	100P 50V
C363	ECBT1H101KB5	100P 50V
C364	ECFR1C104MR	0.1 16V
C392	ECBT1H100JC5	10P 50V
C401	ECEA1CKA100B	10 16V
C402	ECEA1AKA330B	33 10V
C403	ECBT1E103ZF5	0.01 25V
C404	ECEA1CKA330B	33 16V
C405	ECBT1E103ZF5	0.01 25V
C406	ECBT1E103ZF5	0.01 25V
C407	ECEA1AU470B	47 10V
C408	ECBT1E103ZF5	0.01 25V
C409	ECEA1HKA3R3B	3.3 50V
C410	ECEA1HU330B	33 50V
C411	ECKR1H103ZF5	0.01 50V
C412	ECKR1H103ZF5	0.01 50V
C413	ECA2AM470B	47 100V
C414	ECEA1AKA330B	33 10V
C415	ECBT1E103ZF5	0.01 25V
C416	ECEA0JKA470B	47 6.3V
C417	ECBT1E103ZF5	0.01 25V
C418	ECA1EM102B	1000P 25V
C420	ECBT1E103ZF5	0.01 25V
C421	ECEA1HU100B	10 50V
C451	ECBT1E103ZF5	0.01 25V
C485	ECBT1H101KB5	100P 50V
C486	ECBT1H101KB5	100P 50V
C501	ECEA1HKA3R3B	3.3 50V
C502	ECEA1HKA3R3B	3.3 50V
C503	ECBT1H102KB5	1000P 50V
C504	ECBT1H102KB5	1000P 50V
C505	ECBT1H331KB5	330P 50V
C506	ECBT1H331KB5	330P 50V
C507	ECBT1H150J5	15P 50V
C508	ECBT1H150J5	15P 50V
C509	ECEA1HKA010B	1 50V
C510	ECEA1HKA010B	1 50V
C511	ECEA1HU330B	33 50V
C512	ECEA2AU100B	10 100V
C513	ECKR1H223ZF5	0.022 50V
C514	ECKR1H223ZF5	0.022 50V
C515	ECKR1H103ZF5	0.01 50V
C517	ECEA1EU222E	2200 25V
C518	ECKR1H103ZF5	0.01 50V
C519	ECKR1H103ZF5	0.01 50V
C520	ECKR1H103ZF5	0.01 50V
C521	ECKR1H103ZF5	0.01 50V
C522	ECEA1HU332	3300 50V ⚠
C523	ECEA1HU332	3300 50V ⚠
C524	ECEA0JU101B	100 6.3V
C528	ECEA1AKA470B	47 10V
C529	ECBT1E103ZF5	0.01 25V
C536	ECEA1CU101B	100 16V
C537	ECKR1H103ZF5	0.01 50V
C538	ECEA1CKA470B	47 16V
C539	ECKR1H103ZF5	0.01 50V
C554	ECKR1H223ZF5	0.022 50V
C559	ECBT1E103ZF5	0.01 25V
C561	ECEA1HKA2R2B	2.2 50V
C562	ECBT1E103ZF5	0.01 25V
C563	ECEA1AU221B	220 10V
C564	ECBT1E103ZF5	0.01 25V
C565	ECEA1CKA100B	10 16V
C566	ECEA1CKA100B	10 16V
C567	ECEA0JU471B	470 6.3V (GC,GT)
C567	ECEA0JU101B	100 6.3V (GCS,GN)
C597	ECBT1E103ZF5	0.01 25V
C598	ECEA1CKA100B	10 16V
C599	ECEA1HU330B	33 50V ⚠
C601	ECBT1H561KB5	560P 50V
C602	ECBT1H561KB5	560P 50V
C604	ECBT1H561KB5	560P 50V
C605	ECBT1H561KB5	560P 50V
C606	ECBT1H561KB5	560P 50V
C607	ECBT1H561KB5	560P 50V
C608	ECBT1H101KB5	100P 50V
C609	ECEA0JKA470B	47 6.3V
C610	ECBT1C103MS5	0.01 16V
C613	ECEA1HKA010B	1 50V
C614	ECEA1HKA010B	1 50V
C615	ECBT1H150JC5	15P 50V
C616	ECBT1H180JC5	18P 50V
C617	ECBT1H680J5	68P 50V
C618	ECBT1H560J5	56P 50V
C619	ECBT1H680J5	68P 50V
C620	ECBT1H560J5	56P 50V
C621	ECEA1HKA3R3B	3.3 50V
C622	ECEA1VKA100B	10 10V
C623	ECEA1VKA100B	10 10V
C624	ECEA0JKA101B	100 6.3V
C625	ECBT1H102KB5	1000P 50V
C626	ECEA0JU102B	1000 6.3V
C627	ECEA0JU102B	1000 6.3V
C628	ECBT1H102KB5	1000P 50V
C629	ECBT1H101KB5	100P 50V
C630	ECBT1H101KB5	100P 50V
C631	ECBT1C103MS5	0.01 16V
C632	ECFR1C683KR	0.068 16V
C633	ECBT1C222MR5	2200P 16V
C634	ECBT1C222MR5	2200P 16V
C635	ECFR1C223KR	0.022 16V
C636	ECFR1C223MR	0.022 16V
C637	ECFR1C683KR	0.068 16V
C639	ECEA1HKAR33B	0.33 50V
C640	ECEA1HKAR33B	0.33 50V
C641	ECEA1HKN010B	1 50V
C642	ECFR1C104MR	0.1 16V
C643	ECEA1HKN010B	1 50V
C644	ECEA1HKA010B	1 50V
C645	ECEA0JKA470B	47 6.3V
C646	ECEA1CKA100B	10 16V
C647	ECBT1C103MS5	0.01 16V
C648	ECEA1HKA010B	1 50V
C649	ECEA1HKA010B	1 50V
C650	ECBT1C103MS5	0.01 16V
C651	ECBT1H101KB5	100P 50V
C652	ECEA1HKA010B	1 50V
C653	ECBT1H101KB5	100P 50V
C654	ECEA1AU221B	220 10V
C655	ECEA1HKA010B	1 50V
C656	ECBT1H471KB5	470P 50V
C657	ECBT1H101KB5	100P 50V
C658	ECEA1CKA100B	10 16V
C659	ECEA1HKA010B	1 50V
C660	ECBT1E103ZF5	0.01 25V
C661	ECBT1C103MS5	0.01 16V
C662	ECEA1HKA4R7B	4.7 50V
C663	ECBT1H471KB5	470P 50V
C664	ECEA1HKA3R3B	3.3 50V
C665	ECBT1H102KB5	1000P 50V
C666	ECEA1HKA0R1B	0.1 50V
C667	ECEA1HKA0R1B	0.1 50V
C668	ECEA1HKA0R1B	0.1 50V
C669	ECEA1HKA0R1B	0.1 50V
C670	ECBT1E103ZF5	0.01 25V
C673	ECBT1H102KB5	1000P 50V
C674	ECBT1H102KB5	1000P 50V
C675	ECBT1C103MS5	0.01 16V
C676	ECBT1C103MS5	0.01 16V
C677	ECBT1H561KB5	560P 50V
C678	ECBT1H561KB5	560P 50V
C679	ECBT1H104ZF5	0.1 50V

Ref. No.	Part No.	Values & Remarks
C680	ECBT1H101KB5	100P 50V
C681	ECBT1H101KB5	100P 50V
C682	ECBT1H104ZF5	0.1 50V
C687	ECBT1H102KB5	1000P 50V
C688	ECBT1H102KB5	1000P 50V
C689	ECEA1AKA220B	22 10V
C690	ECEA0JKA101B	100 6.3V
C691	ECFR1C333MR	0.033 16V
C692	ECBT1H121KB5	120P 50V
C693	ECBT1H471KB5	470P 50V
C694	ECBT0J223NS5	0.022 6.3V
C696	ECBT1H471KB5	470P 50V
C697	ECBT1H331KB5	330P 50V
C698	ECBT1E103ZF5	0.01 25V
C701	ECEA0JKA330I	33 6.3V
C702	ECUZNE104MBN	0.1 25V
C703	ECEA0JKA101I	100 6.3V
C704	ECUZNE104MBN	0.1 25V
C705	ECUZNE104MBN	0.1 25V
C706	ECUV1H272KBN	2700P 50V
C707	ECUV1E273KBN	0.027 25V
C708	ECUV1H472KBN	4700P 50V
C709	ECUV1C473KBN	0.047 16V
C710	ECUV1H182KBN	1800P 50V
C711	ECUZNE104MBN	0.1 25V
C712	ECUZNE104MBN	0.1 25V
C713	ECUV1C104MBM	0.1 16V
C714	ECEA0JKA101I	100 6.3V
C716	ECUV1H561KBN	560P 50V
C717	ECUZNE104MBN	0.1 25V
C718	ECUV1C224KBN	0.22 16V
C721	ECUV1H150JCN	15P 50V
C722	ECUV1H150JCN	15P 50V
C723	ECEA1AKA221I	220 10V
C724	ECUV1C104MBM	0.1 16V
C725	ECUV1H102KBN	1000P 50V
C726	ECUV1H102KBN	1000P 50V
C727	ECEA1HPK010I	1 50V
C728	ECEA1HPK010I	1 50V
C730	ECUZNE104MBN	0.1 25V
C731	ECEA0JKA221I	220 6.3V
C732	ECEA0JKA221I	220 6.3V
C733	ECUZNE104MBN	0.1 25V
C734	ECEA1AKA221I	220 10V
C735	ECUZNE104MBN	0.1 25V
C736	ECUZNE104MBN	0.1 25V
C737	ECUZNE104MBN	0.1 25V
C738	ECUV1C154KBN	0.15 16V
C742	ECUV1E273KBN	0.027 25V
C743	ECUZNE104MBN	0.1 25V
C744	ECUV1E822KBN	8200P 25V
C745	ECUV1C473MBN	0.047 16V
C747	ECUV1H222KBN	2200P 50V
C748	ECUV1H471KBM	470P 50V
C749	ECUZNE104MBN	0.1 25V
C751	ECUZNE104MBN	0.1 25V
C752	ECUV1H152KBN	1500P 50V
C753	ECUV1H471KBM	470P 50V
C754	ECUV1H471KBN	470P 50V

■ Packing Materials & Accessories

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list .
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area)
Parts without these indications can be used for all areas.
* The "(SF)" mark denotes the standard part.
* [M] Indicates in the Remarks columns indicates parts supplied by **MESA**.
* Remote Control Unit : Supply reriod for three years from terminal of production.

Ref No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPF0100	BAG (SET)	[M]
P2	RPG2804	PACKING CASE	[M](GT)
P2	RPG3058	PACKING CASE	[M](GN)
P2	RPG2802	PACKING CASE	[M](GCS,GC)
P3	RPN0922-2	POLYFOAM	[M]
P4	SPSD155	ACCESSORY CASE	
		ACCESSORIES	
A1	EUR643804	REMOTE CONTROL	[M]
A1-1	UR64EC1638-1	REMOTE CON COVER	[M]
A2	RQT3309-B	O/I BOOK	[M](GN)
A2	RQT3312-G	OPERATING INSTRUCTION	[M](GCS,GC,GT)
A3	RSA0006	FM ANT	
A4	RSA0010	AM LOOP ANT	
A5	RJA0036-K	AC CORD	(GN) ⚠
A5	RJA0019-2K	AC CORD (SF)	(GCS,GC,GT) ⚠
A6	RJP1SG04-H	PLUG ADAPTOR	[M](GT)
A6	SJP5213-2	AC CORD ADAPTOR	(GCS,GC)

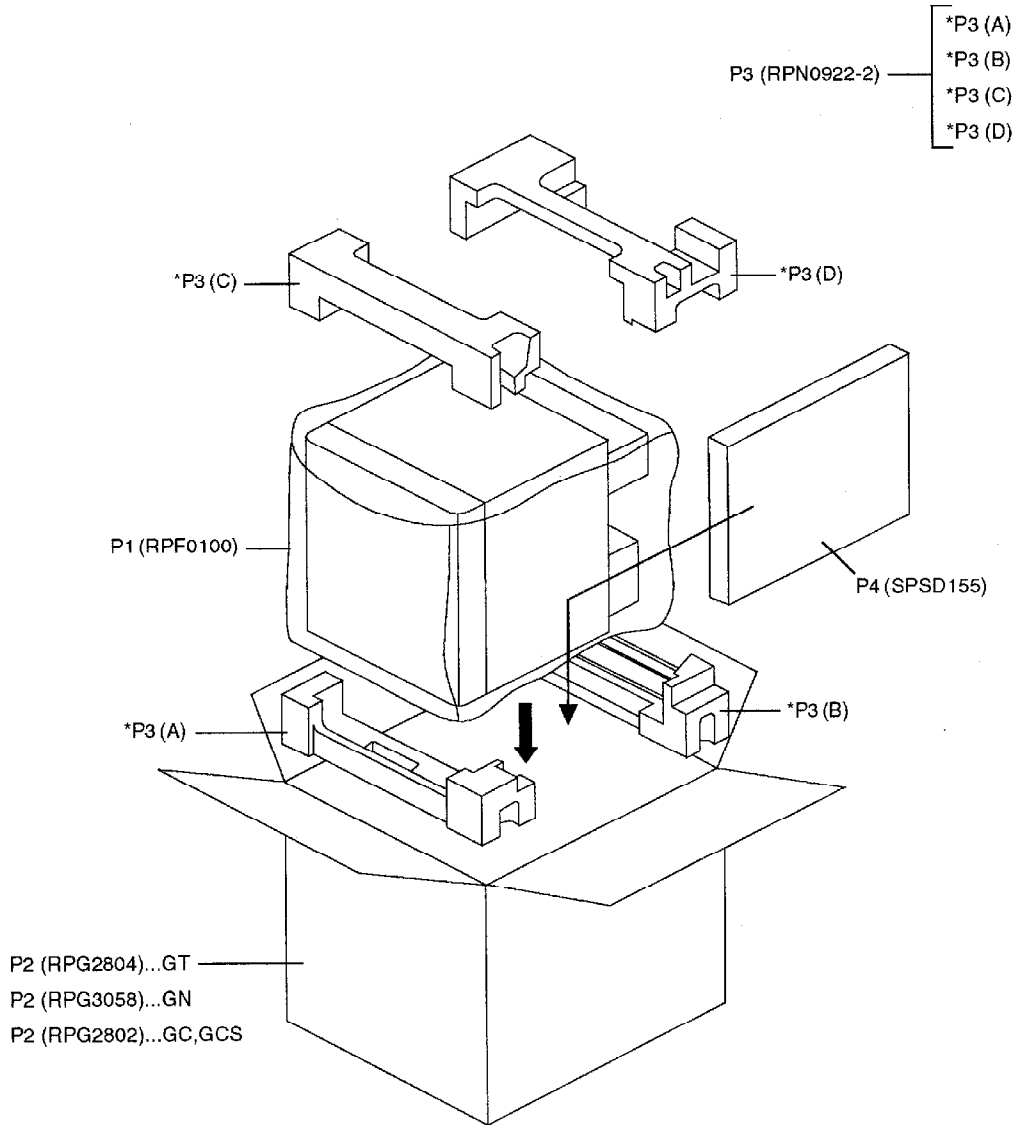
■ Packaging

ACCESSORY

A1 (EUR643804)	: REMOTE CONTROL
A4 (RSA0010)	: AM LOOP ANTENNA
A6 (RJP1SG04-H)...GT	: AC CORD ADAPTOR
A6 (SJP5213-2)...GC,GCS	: AC CORD ADAPTOR

FAN BAG

A2 (RQT3309-B)...GN	: INSTRUCTION MANUAL
A2 (RQT3312-G)...GC,GT,GCS	: INSTRUCTION MANUAL
A3 (RSA0006)	: FM ANTENNA
A5 (RJA0036-K)...GN	: AC CORD
A5 (RJA0019-2K)...GC,GT,GCS	: AC CORD



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